Archives of Dermatology and Syphilology

VOLUME 4 SEPTEMBER, 1921 NUMBER 3

RESEARCH PROBLEMS IN DERMATOLOGY*

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PHILADELPHIA

Fellows of the American Dermatological Association:

It is my pleasant duty to bid you welcome and to announce formally the opening of the scientific sessions of the American Dermatological Association.

Your president is charged with the traditional duty of addressing the members of this body on some topic of general dermatologic interest. The forty-three preceding addresses have so fully covered the field that it is difficult to present a text that is either new or important.

It might not be unprofitable, however, to discuss briefly certain phases of our knowledge, or lack of knowledge, of the etiology of a few diseases of the skin, to which special interest attaches. These furnish problems for research which it is to be hoped will be attacked and solved by present and future members of this and similar bodies.

Nature conceals many of her secrets so well that only the most persistent and intelligent effort is permitted to dispel the heavy veil of obscurity which envelops them. Like the trick of the magician, what is apparently unfathomable, becomes diaphonously simple when the solution is known.

Scabies was a mysterious disease before it was definitely ascertained that it was caused by the itch mite and by this parasite alone.

Our successors may speak with condescending tolerance of the day when the causes of pityriasis rosea, lichen planus, psoriasis, acne and other common dermatoses were the subjects of unfruitful discussion. Such, however, is the history of the various sciences, and we need not feel undue humiliation in admitting the facts. The consciousness of our deficiencies, however, should stimulate us to labor energetically to shed every possible illumination on the hitherto unascertained causes of diseases of the skin. Contributions to our knowledge of diseases of the skin may, by analogy or otherwise, aid in the elucidation of the etiology of deeper seated affections.

*Presidential address read before the forty-fourth annual session of the American Dermatological Association, Swampscott, Mass., June 2-4, 1921.

CANCER

Do not the reasonably demonstrated causes of cancer of the skin, point as far as they go against the parasitism of cancer? Let us briefly appraise our evidence. That the chemical or actinic rays of light are a factor of importance in the causation of cancer of the skin can scarcely be doubted. Sailors and farmers, who are perhaps more exposed to the sun's rays than persons in other occupations, exhibit the highest incidence of cancer of the face and hands. I have seen many thousands of negroes with skin diseases, but I have yet to observe a full-blooded negro with keratosis or cancer of the skin of the face.[1] The pronounced layer of pigment appears to act as an effective barrier against the ingress of the noxious actinic rays. Certain other forms of radiant energy—the roentgen rays and radium rays—may under certain conditions produce cancer of the skin. The relationship of the effect of the solar and roentgen rays is perhaps best illustrated in that distressing and remarkable disease known as xeroderma pigmentosum. When we mention the sequence of the cutaneous phenomena—freckle-like pigmentation, dryness, atrophy, telangiectases, keratoses and malignant neoplasms—do we not conjure up the picture of chronic roentgen-ray effects? The disease is familial but not hereditary. As many as seven boys in a single family consisting of eight boys and five girls have been reported by Ruder to suffer from this disease. It would certainly appear that these children exhibit a congenital hypersensibility to the action of the actinic rays of light. To them is not the sun virtually a huge roentgen-ray tube, exposure to which produces progressive changes leading to cancer and ultimately death? The study of the causes of this hypersusceptibility offers an important field for research. Toyama, after a study of thirty-three cases in Japan, declares his belief that the prevalence of the disease in that country is due to intermarriage. Vignolo-Lutati likewise expresses the opinion that the predisposition of the cutaneous cells results from consanguinity.[2] Other causes of cancer of the skin worthy of further investigation are: the long continued and excessive ingestion of arsenic and the influence of long continued external exposure to tar, soot and crude paraffin.

Dermatologic experience indicates that cancer of the skin is in the vast majority of cases (omitting possibly the cancers developing from

1. I have seen one case of cancer of the face in a negro, but the subject was an elderly mulatto.

2. It may be here remarked that there is another disease in which there exists a hypersensibility to the sun's rays, although the effects are quite different. In pellagra, inflammatory changes occur in the skin under the influence of solar rays which are insufficient to evoke such effects in normal persons. The cause here is presumably a biochemical one.

nevi and similar growths) due to repeated mechanical, chemical and actinic or electromagnetic stimuli. The causes that render persons hypersusceptible to these influences is a fertile field for investigation.

ACNE

Another dermatosis of absorbing interest is the common affection—acne. Concurrent clinical experience furnishes certain definite data concerning the predisposing cause of this affection and certain factors which provoke outbreaks, but who is there that can make an authoritative pronouncement on the complex etiologic relationships? In general terms, acne is a disease of puberty and of the decade following its inauguration. A few years ago, while examining several hundred medical students for demobilization, I was astounded to find that approximately 70 per cent. of the young men had more or less acne on the trunk. The statement has been generally accepted that the development of acne is coincident with the physiologic activity of the pilosebaceous apparatus that accompanies puberty. This is regarded, however, as a predisposing cause and other factors are believed to be operative to produce a sufficient perversion of the physiologic process to result in actual disease. Various contributory causes are cited by all authors, chief among which are disturbances of the alimentary and utero-ovarian systems.

Most writers believe the exciting cause to be bacterial and interest has focused on the bacillus described by Sabouraud, Unna and Hodara, Engman, and Gilchrist. As the microbacillus of Sabouraud may, however, be found in myriads in the sebaceous material expressed from the follicles of the nose of practically all adolescents and adults, it is possible that this organism is merely a saprophyte under ordinary conditions and becomes noxious only in a soil prepared by other factors. The staphylococcus is certainly not the cause of acne, and yet it is present in all acne pustules.

General experience will support the statement that practically all young female patients with acne exhibit a menstrual exacerbation of the eruption. Less well authenticated but asserted by many experienced clinicians is the allegation that masturbation and other sexual stimulation in young men is provocative of acne outbreaks.

When the phenomena of the menstrual acne relapse is considered in conjunction with the initial onset of acne at the approach of puberty, the inference appears to be justified, in the light of modern studies on endocrinology, that an internal secretion from the sex glands or of some other endocrine structure energized by the gonads is an etiologic factor of importance. May not the ovarian or testicular hormone or hormones of correlated organs of internal secretion overstimulate the sebaceous glands and alone or associated with other factors lead to the

development of acne lesions? To be sure, acne lesions commonly develop from other causes in the interim between the menstrual periods, but the monthly outbreak is nevertheless striking. It is also suggestive that after the cessation of ovarian activity—in other words after the menopause—acne is practically unknown.

THE INFLUENCE OF ENDOCRINE GLANDS ON THE SKIN

Endocrinous glands may have a stimulating influence on similar glands elsewhere, or they may exert an antagonistic or repressive effect. Many disorders of the ductless glands produce profound changes in the skin and subcutaneous tissue and exert an influence either stimulating or inhibitory on the activity of the sebaceous and sweat glands.

We are all familiar with the white, dry, scaly and indurated skin of myxedema; the hairs fall out and the sebaceous and sweat secretions are suppressed. Darier says that the hypothyroidism of the menopause, which is very common, gives rise to a greatly attenuated picture of myxedema. On the other hand, in hyperthyroidism, we have by contrast the flushed moist skin seen in exophthalmic goiter.

ICHTHYOSIS

There is a not uncommon dermatosis of unknown origin and regarded by most writers as a congenital malformation in which the skin is harsh, dry and scaly, in which the sebaceous and sweat secretions are greatly diminished and in which the hairy system may be imperfectly developed; the patients are usually thin, poorly developed and of low resistance. Does not this disease, which we call ichthyosis, suggest a disturbance of the endocrine glands? Colcott Fox, Weill and others have recorded cases of ichthyosis in which there was atrophy of the thyroid gland and improvement after thyroid treatment. Winfield reported the case of an infant with ichthyosis that died at the end of two and one-half weeks and who at necropsy was found to have no thyroid gland. On the other hand, Rion described a case of fetal ichthyosis in which necropsy disclosed the presence of a normal thyroid gland.

POSSIBILITY OF AN INTERNAL SECRETION FROM THE SKIN

Despite the incompleteness of our comprehension of the relationship between the various glands of internal secretion, interlocking reciprocal influences have been demonstrated.

The thyroid stimulates the gonads or sex glands and the chromaffin system. The thymus inhibits the sex glands and its atrophy favors sexual development. The interrenal system stimulates the sex glands and is reciprocally stimulated by them. The anterior and middle portions of the pituitary stimulate the sex glands, inhibit the thyroid and are themselves inhibited by the thyroid and the sex glands.

From our knowledge of the condition of the skin in myxedema, acne and oily seborrhea, there is some reason for the assumption that the thyroid and the sex glands and possibly the pituitary gland stimulate the action of the sebaceous follicles.

The skin with its complex architecture and the numerous highly specialized structures therein contained cannot be regarded merely as the protective envelop of the body, but as an important organ whose functioning is essential to life.

Biedl includes among the organs of internal secretion the spleen, the pancreas, the gastric and intestinal mucosa and the kidneys. Is it not conceivable that there may be likewise an internal secretion from the skin, emanating possibly from the sebaceous glands or some other structure contained within the derma? That the sebaceous glands are commonly overstimulated when puberty sets in is suggested by the development of oily seborrhea at this time; it rarely if ever develops before this period. When senility is reached sebaceous secretion becomes markedly diminished. In hypothyroidism, and particularly in myxedema, the secretion of the sebaceous glands is diminished or suppressed. If there is an internal secretion from the skin the sebaceous glands would appear to be the most likely structures involved in the process on the principle that a gland of internal secretion is stimulated by one endocrine center and often repressed by another. The mechanism of secretion of the sebaceous glands is quite different from that of the excretory glands of the body. It is not merely an outpouring of a fluid as is the case with the kidneys and sweat glands; excessive sebaceous secretion is due to an abnormal cellular proliferation within the gland—the cells then undergoing fatty degeneration, the nucleus becoming contracted and ultimately disappearing and the cell wall progressively distended, thinned and ruptured. The fatty cells and detritus are then extruded into the excretory duct.

In some respects the activity of the sebaceous glands is similar to that of the mammary glands. Both structures consist of racemose glands and in each case a fatty fluid is secreted through fatty degeneration of cells.[3] While the mammae are not included by most writers as glands of internal secretion, yet the effect of lactation on menstruation and on the involution of the uterus is recognized; furthermore, at the beginning of pregnancy the injection of a mammary extract augments to a remarkable degree the tonicity of the muscle fibers of the uterus.

3. The analogy between the mammary and the sebaceous glands is further suggested by an observation in natural history. There are two mammals which are believed to have survived from prehistoric times which lay eggs and do not suckle their young—the Ornithorhynchus and the Echidna. The young browse over the maternal skin and feed on a nutritive fluid which exudes from scattered glands in the skin. No mammae or nipples exist.

The mammary glands might therefore be regarded as subsidiary organs of internal secretion, and in a somewhat similar sense the sebaceous glands may occupy a parallel position.

It is admitted, of course, that the suggestion of the existence of an internal secretion from the skin is purely speculative and unsupported at the present time by any experimental evidence. Hypotheses, however, are often useful as a stimulus and guide to more accurate observation and as an incentive to research. A medical friend has suggested to me the possible value of a desiccated skin extract in ichthyosis, and I have requested a pharmaceutical laboratory to prepare a desiccated cutaneous extract of the skin of the pig for trial in this disease. I have, moreover, recently suggested the use of testicular and thyroid extract in a pronounced case that has come under my observation.

It might advance our knowledge of this affection if in ichthyotic patients coming to necropsy, a careful microscopic examination of the thyroid, gonads, pituitary and other suspected endocrine glands were made.

ECZEMA

If time permitted, one might refer to the need and opportunity for research in connection with that conglomerate concept which we call "eczema."

There is a crying need for an elucidation of the causative factors in this widespread and distressing disease. Some cases are, to be sure, merely instances of acute, subacute or chronic dermatitis—due to the action of external irritants. In some instances the external stimulus is operative only in the presence of a systemic sensitization. Many eczematoid eruptions are of mycotic origin. In the cases of chronic, relapsing and rebellious eczema various causes operating from within may be at work. It becomes the duty of the dermatologist to ascertain whether protein sensitization from food or bacteria, endocrine disturbance, focal infection, intestinal toxemia, renal insufficiency or some general metabolic disorder is the etiologic factor. The solution of these vexed questions is astoundingly difficult and often impossible, but the responsibility for their clarification rests primarily with us, and we must face the task if we are to uphold the dignity and importance of our special calling.

It is reasonable to hope and expect that within the next decade physiologic chemistry, pathologic chemistry and biochemistry will throw a much needed light on the problems involved. Our duty should be by honest and painstaking effort to speed the day when what is now unknown in dermatology shall become known in the interest of science and of humanity.

THE SACHS-GEORGI REACTION IN THE SPINAL FLUID OF PATIENTS WITH SYPHILIS *

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The Sachs-Georgi reaction depends on the visible flocculation of a cholesterinized alcoholic extract of beef heart on its incubation with specific serums or spinal fluid. Drs. Sachs and Georgi [1] in their original paper claimed a reliability equal to, or even greater than, the Wassermann reaction in distinguishing syphilitic from nonsyphilitic serums, but in a later paper they [2] somewhat modified this view. Several other investigators, Georgi,[3] Plant,[4] Nathan,[5] Levinson and Petersen,[6] Logan,[7] with slight modifications of the original technic, report results favoring the accuracy of the reaction as an additional method for the serodiagnosis of syphilis.

In reviewing the literature, it is noted that most of the results with the Sachs-Georgi reaction are recorded on serums. As a reliable estimate of the value of the reaction can only be judged after the findings of several laboratory workers are collected, the present series of comparisons of the Sachs-Georgi and the Wassermann reactions on the spinal fluid in syphilitic cases were undertaken. The Wassermann tests on all the spinal fluids were made by Doctor Ide of the State Psychopathic Hospital, Ann Arbor, who directs such work for the University Hospital and for several other state institutions. The reading of each Sachs-Georgi reaction was made without previous knowledge of the results of the Wassermann test, and except in a few cases, each reaction was made on the same day. This permitted an unbiased opinion in noting the degree of flocculation of the Sachs-Georgi reaction, as well as a comparison with a Wassermann test conducted by a reliable and experienced laboratory worker.

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* The spinal fluid was obtained from the Dermatology Clinic, Dr. Udo Wile, and the Clinic for Neurology, Dr. C. D. Camp.

1. Sachs, H., and Georgi, W.: Med. klin. **33**:805, 1918.
2. Sachs, G., and Georgi, W.: München. med. Wchnschr. **66**:440, 1919.
3. Georgi, F. K.: München. med. Wchnschr. **67**:1318, 1920.
4. Plant, F.: Ztschr. f. Neurol. u. Psychiat. **52**:193, 1919.
5. Nathan, E.: Med. klin. **41**:1006, 1918.
6. Levinson, S. A., and Petersen, W. F.: The Sachs-Georgi Reaction For Syphilis, Arch. Dermat. & Syph. **3**:286 (March) 1921.
7. Logan, W. R.: Lancet **1**:14 (Jan. 1) 1921.

The summarized results of my work in 379 cases are given in the table. The cases are classified as paresis, tabes dorsalis, latent syphilis, etc., in accordance with their clinical characteristics.

In this table of 379 cases, an absolute agreement is shown in 323, or 85 per cent., and a disagreement in 56, or 15 per cent. If, however, the cases are included that are in practical agreement, that is, doubtful vs. positive, 344, or 91 per cent., agree and 35, or 9 per cent., disagree. Further inclusion of cases in which the results are not diametrically opposed, that is, negative vs. doubtful, 360, or 95 per cent., are in agreement and nineteen, or 5 per cent., disagree. Of the nineteen cases that are at variance, three cases, two of tabes dorsalis and one of cerebrospinal syphilis, are cases in which the Wassermann test was positive and the Sachs-Georgi reaction negative. The sixteen cases in which the Sachs-Georgi reaction was positive and the Wassermann test was negative comprise one case of paresis, two cases of tabes dorsalis, one case of cerebrospinal syphilis, seven cases of latent syphilis, one case of primary syphilis, two cases of secondary syphilis, one case of tertiary syphilis-gumma and one case of vascular syphilis. Thus, the most noticeable divergence is in the earlier form of syphilis, showing no clinical symptoms or signs of central nervous system involvement. These results speak in favor of the greater sensitiveness of the Sachs-Georgi reaction, and this is especially noted on considering the cases under a given diagnosis.

In sixty-four cases of paresis, the results in fifty-eight, or 91 per cent., agree and six, or 9 per cent., were in disagreement; of the latter, four favored the Wassermann and two the Sachs-Georgi reaction. Of eighty-one cases of tabes dorsalis, seventy-one, or 88 per cent., were in absolute agreement; the ten divergent cases were equally divided. Of 104 cases of cerebrospinal syphilis, fourteen, or about 14 per cent., were not in agreement; eleven cases favored the Wassermann reaction. Eighty-four cases of latent syphilis showed a difference in results of 19 per cent.; of the sixteen divergent cases, three favored the Wassermann and thirteen the Sachs-Georgi reaction. Twelve cases of primary syphilis differed in two, or 19 per cent., being entirely in favor of the Sachs-Georgi reaction. Twelve cases of secondary syphilis diverged in three, or 25 per cent., also being in favor of the Sachs-Georgi reaction. In ten cases of tertiary syphilis-gumma—eight, or 80 per cent., were in absolute agreement, the two remaining cases being in favor of the Sachs-Georgi reaction. Of the three divergent cases of vascular syphilis, one favored the Wassermann and two the Sachs-Georgi reaction.

This tabulation would suggest that the chief interest in the flocculation reaction lies in the question of an earlier serodiagnosis of neurosyphilis than that provided by the Wassermann reaction.

Author's Findings in Three Hundred and Seventy-Nine Cases

Diagnosis	Number of Cases	Wassermann Reaction Positive; Sachs-Georgi Reaction Positive	Wassermann Reaction Positive; Sachs-Georgi Reaction Doubtful	Wassermann Reaction Positive; Sachs-Georgi Reaction Negative	Wassermann Reaction Doubtful; Sachs-Georgi Reaction Negative	Wassermann Reaction Doubtful; Sachs-Georgi Reaction Doubtful	Wassermann Reaction Doubtful; Sachs-Georgi Reaction Positive	Wassermann Reaction Negative; Sachs-Georgi Reaction Positive	Wassermann Reaction Negative; Sachs-Georgi Reaction Doubtful	Wassermann Reaction Negative; Sachs-Georgi Reaction Negative	Agree	Opposed
Paresis	64	56	3	0	1	1	0	1	1	1	58	6
Tabes dorsalis	81	69	2	2	1	1	2	1	2	1	71	10
Cerebrospinal syphilis	104	88	7	1	3	1	1	1	1	1	90	14
Latent syphilis	84	5	1	0	2	2	4	2	7	61	68	16
Primary syphilis	12	1	0	0	0	0	0	1	1	9	10	2
Secondary syphilis	12	5	0	0	0	0	0	1	2	5	9	3
Tertiary syphilis (gumma)	10	0	0	0	0	0	0	1	1	8	8	2
Vascular syphilis	12	5	1	0	0	0	0	1	1	4	9	3
Total	379	228	14	3	7	5	7	9	16	90	323 85%	56 15%

The general distribution of positive Sachs-Georgi readings on Wassermann negative fluids of patients with the earlier forms of syphilis would tend to rule out the query of false positive flocculation reactions.

TECHNIC

Many variations and modifications of the technic as given by Drs. Sachs and Georgi were tried before attempting the present series of cases. These experiments will be given in a later paper. The technic I used is as follows: The lipoid mixture was prepared according to the directions of Drs. Sachs and Georgi. An alcoholic extract of fresh beef heart was prepared by using 1 gm. of macerated heart muscle to 5 c.c. of 96 per cent. alcohol, which was extracted for twenty-four hours in an icebox; this was filtered, and to 100 c.c. of the filtrate 200 c.c. of 96 per cent. alcohol and 13.5 c.c. of a 1 per cent. alcoholic cholesterin solution were added. Just before the test, one part of the alcoholic extract was diluted with five parts of 0.85 per cent. NaCl solution, and the latter added slowly, resulting in a marked opalescent emulsion. To 1 c.c. of the spinal fluid was added 0.5 c.c. of the emulsion; this was incubated for twenty-four hours at 37 C. As a control, at least four tubes of 1 c.c. of 0.85% NaCl solution plus 0.5 c.c. of the emulsion were used, as well as a known positive and negative spinal fluid. The heart extract mixture was selected for sensitiveness from several tried preparations as the variations, though prepared with the same technic, were marked. All glassware used was thoroughly clean and sterile. The saline solution was sterile.

The following scale for reading the degree of flocculation was used:

Negative, no visible change in the emulsion even with the aid of a hand lens.

Doubtful, production of very small flocculi with slight clearing.

Moderately positive, not complete clearing with numerous small flocculi.

Positive, complete clearing with large flocculi adherent to the side of the tube or massed in the bottom.

In classifying, the moderately positive were recorded as positive.

CONCLUSIONS

1. The results of the Sachs-Georgi reaction on the spinal fluid closely parallel those of the Wassermann test.

2. The Sachs-Georgi reaction is a substitute or may be a valuable addition to the Wassermann test on the spinal fluid.

3. The Sachs-Georgi reaction furnishes a means for an earlier serodiagnosis of central nervous system syphilis than the Wassermann test.

RECKLINGHAUSEN'S DISEASE: ITS RELATION TO THE ENDOCRINE SYSTEM

REPORT OF AN ILLUSTRATIVE CASE *

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Throughout this article the term "Recklinghausen's disease" is used for all cases presenting the varying syndrome usually indicated by the name "generalized neurofibromatosis." Von Recklinghausen [1] and Adrian [2] have both long since objected to the latter term as giving an incorrect impression of the nature of the growths characteristic of the disease. Many French physicians have also made the equally valid objection that the name "generalized neurofibroma" has thrown undue emphasis on only one aspect of the syndrome and has thus limited the disease, in the minds of many, to its most common forms, to the exclusion of the unusual and incomplete forms, "formes frustes," which are not so unusual as one is led to believe. The latter, of which the author's case is an example, almost invariably shows pigmentation, and the accompanying psychic, nervous, and trophic disorders frequently play a more important part in the life of the patient than do the cutaneous disorders themselves.

The form of Recklinghausen's disease most frequently seen is that with multiple molluscous fibromas and neuromas, with or without pigmentation, and no obvious nervous or trophic troubles. Parkes Weber,[3] in 1909 (page 52), makes this classification: (1) plexiform neuroma unaccompanied by multiple molluscous tumors of the skin, with or without cutaneous pigmentation, (2) multiple molluscous tumors of the skin without obvious neurofibromatosis of the nerve trunks, with or without cutaneous pigmentation, (3) pigmentation of the skin not (at least as yet) accompanied by obvious neurofibromatosis of the nerve trunks or molluscous tumors (cutaneous neurofibroma), and (4) anomalous cases of neurofibromatosis complicated by the coexistence of bony or epidermic (papillomatous) changes. Weber and

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1. Von Recklinghausen, F.: Ueber die multiplen Fibroma der Haut und ihre Beziehung zu den multiplen Neuromen, Berlin, Hirschwald, 1882.

2. Adrian, C.: Ueber Neurofibromatose und ihre Komplikationen, Bruns Beitr. klin. Chir. **31**:1-98, 1901. Multiple Neurofibromatose, Centralbl. Grenzgeb. d. Med. u. Chir. **6**:81, 1903.

3. Weber, F. P.: Cutaneous Pigmentation as an Incomplete Form of Recklinghausen's Disease, Brit. J. Dermat. **21**:49-53, 1909.

Little [4] state that an early incomplete form of the disease is seen in cutaneous pigmentation (diffuse brownish café-au-lait patches or sheets of pigmentation, discrete spots and patches, lentigo, and pigmented nevi) which may be present a long time, usually in young people, frequently from birth, before any molluscous skin tumors appear. There are many cases in the literature in which melanoderma is the only cutaneous symptom of Recklinghausen's disease.

THE ADDISONIAN SYNDROME

Besides the cutaneous conditions of Recklinghausen's disease, and, significantly, particularly in those cases characterized by marked pigmentation, there is quite frequently seen a more or less complete syndrome indicative of dysfunction of the glands of internal secretion, and recalling the picture of insufficiency of the suprarenal glands in Addison's disease. This condition may include any or all of the following:

1. Sensory Disorders: Arthralgic or rheumatoid pains, general or localized particularly to the lombo-abdominal region and the calves of the legs; formications; vague esthesias; hyperesthesias.

2. Motor Disorders: Vertigoes; motor incoordinations; trepidations; augmentations of reflexes; diminution of muscular force; asthenia, sometimes progressive to death. Landowski [5] (Thèse, Paris, 1894) states that "what dominates with these patients is a state of general depression or torpor similar to that of Addison's disease. They can hardly move themselves—walking is painful—the slightest movement is a labor. All intellectual effort is fatiguing. The face is dull and stupid, the body more or less bent, thin, and meager."

3. Psychic Symptoms: Difficulty in learning at school is most commonly mentioned; apathy, indifference; hesitations of speech, stammering; loss of memory; melancholia; fatalism; sometimes imbecility and idiocy of the cretinoid type. The adenoid facies is noted. Charpentier,[6] 1910, states that 63 per cent. of the cases of Recklinghausen's disease are accompanied by psychic defects symptomatic of mental degeneracy. The disease is rare in veritable aliens. As is obvious, these conditions are quite different from those present in the same disease when the neurofibromatosis has invaded the cerebrospinal nerves or even the central nervous system itself; in this case, there are symptoms common to any condition of cerebrospinal pressure.

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4. Little, G.: Meeting Roy. Soc. Med., Dermat. Sec., June 17, 1909, Brit. J. Dermat. **21**:253, 1909.

5. Landowski, L.: La neuro-fibromatose généralisée. Gaz. hôp., Paris **69**: 946, 1896.

6. Charpentier, J.: Maladie de Recklinghausen et psychose périodique, L'Encephale **5**:460-465, 1910.

4. Defects of Development and Faulty Nutrition: Stigmas of degeneracy usually congenital, such as nevi, arched palate, facial asymmetry, prognathism, malformation of ears, syndactylism, badly spaced teeth, troubles with the nails. The adult, usually of small stature, shows lack of complete development, infantilism, faults of the hairy system, dwarfism and sexual underdevelopment with frigidity. There is frequently scoliosis, kyphosis, osteomalacia and friability of the bones.

5. Digestive Complaints: Anorexia, nausea, cramps, vomiting.

6. Examination of the urine may reveal glycosuria and albuminuria, and the blood may show a certain degree of eosinophilia.

Few patients have all of the symptoms mentioned in the foregoing, but many possess a sufficient number of them to present an unmistakable syndrome which various French writers, notably Charpentier, call the classic picture of Recklinghausen's disease, regarding the psychic symptoms as practically habitual.

REVIEW OF THE LITERATURE [7]

A somewhat detailed account of characteristic cases is here presented, since, except in the article of Elliott and Beifeld [8] (1914), which attempts to connect Recklinghausen's disease with the condition status thymolymphaticus, there has been no review in English of the work of many foreign writers, notably of the French and Italian, who have endeavored to establish a connection between Recklinghausen's disease and glandular dysfunction. Although many cases are reported in which the writer's interest was so entirely dermatologic as to exclude any other information, and although there are others in which the authors state that no nervous or functional symptoms were present, there is also considerable literature on cases in which involvement of the endocrines, sex glands, pituitary and thyroid glands, and suprarenals is unmistakable. The picture is one of general glandular dystrophy with varying emphasis on different glands in different cases.

Sex Glands.—It is significant that many cases, some with no particular Addisonian complex, are influenced by the onset of menstruation, by pregnancy and by the menopause. Pigmentation and tumors usually first appear or rapidly increase between the twelfth and the eighteenth years; it is quite a common statement in the histories of both male and female cases that the disease developed at the onset of puberty.

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7. An excellent review of the literature up to the year 1903 may be found in Adrian's article of that year.

8. Elliot, C. A., and Beifeld, A. F.: Generalized Neuromatosis. Report of a Case Showing a Superficial Resemblance to Hodgkin's Disease, J. A. M. A. **63**:1358-1362, 1914.

Menstrual anomalies figure in certain cases, as in Meige and Feindel's [9] (1903) myxedematous case of infantilism, in which menstruation was barely established, and in a similar case of Orzechowski's [10] (1912) of a girl of 18 in whom it had never been established.

Bourcy and Laignel-Lavastine [11] (1900) reported a case in which tumors first developed at the age of 15; more appeared after marriage; and immediately after the menopause a molluscum pendulum appeared. Hirst [12] (1911) and Sutton [13] (1914) had cases in which tumors appeared during pregnancies, but not between pregnancies. In Sutton's case, the tumors shriveled up after the first delivery, but some of those of the second pregnancy persisted.

Bérard [14] (1902) reported a case without an Addisonian picture, in which an enormous cyst of the ovaries was associated with multiple cutaneous and subcutaneous tumors. After ovariotomy, the tumors progressively disappeared until at the end of three years only the smallest remained. Pascalis [15] (1911) and Oddo [16] (1905) report similar cases.

Many of the male cases also develop or become active at puberty, and an incomplete or delayed sexual development, cryptorchidism and lack of pubic hair and other characteristics are mentioned in cases without any other obvious signs of glandular involvement. Harbitz [17] (1909) reports the case of a man of 28, who showed pigmentation at birth and developed generalized cutaneous fibromas at the age of 15. There was cryptorchidism. Bénaky [18] (1904) had a patient, a man of 40, with congenital pigmentation, generalized neurofibromatosis and

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9. Meige, H., and Feindel, E.: Infantilisme myxoedémateux et maladie de Recklinghausen, Rev. neurol. **11**:857, 1903.

10. Orzechowski, K., and Nowicki, W.: Zur Pathogenese und pathologischen Anatomie der multiplen Neurofibromatose und der Sclerosis tuberosa, Ztschr. Neurol. u. Psychiat. **11**:237-307, 1912.

11. Bourcy, P., and Laignel-Lavastine: Un cas de maladie de Recklinghausen, Soc. méd. hôp. **22**:21-26, 1905.

12. Hirst, B. C.: Etiological Influence of Pregnancy on Molluscum, Am. J. Med. Sc. **147**:419, 1914.

13. Sutton, R. L.: A Clinical Note on Fibroma Molluscum Gravidarum, Fibrosum, Am. J. Obst. **63**:256, 1911.

14. Bérard, L.: Ancien kyste de l'ovaire et tumeurs cutanées multiple, Bull. Soc. Chir. Lyon. **5**:15 (Nov. 13) 1902.

15. Pascalis, G.: Molluscum pendulum volumineux de la cuisse au cours d'une maladie de Recklinghausen, Bull. Soc. anat. de Par. **13**:102, 1911.

16. Oddo, C.: Maladie de Recklinghausen avec pigmentation des muqueses, Rev. neurol. **13**:412-415, 1905.

17. Harbitz, F.: Multiple Neurofibromatosis, Arch. Int. Med. **3**:32 (Feb.) 1909.

18. Bénaky: Neuro-fibromatose généralisée avec molluscum pendulum de la moitié droite de la face, Ann. de dermat. et syph. **5**:977-982, 1904.

molluscum pendulum, with skeletal deformities, diminution of sensibility, cramps and fatigue, accompanied by sexual underdevelopment. Guinon and Reubsäet [19] (1907) describe the case of a boy of 12 with pigmentation from birth, progressively growing tumors, stupidity, adenoid facies and lack of testicular development. Preiser and Davenport,[20] Elliott and Beifeld, Poisson and Lebat,[21] and Graham Little report similar conditions in young boys.

Pituitary Gland.—It is to be expected that cases of Recklinghausen's disease should be associated with hypophysis dysfunction, as there seems to be some connection between hypopituitarism and certain tumor formations, apparent in conditions like multiple lipomatosis, etc.

Evidences of pituitary dysfunction in Recklinghausen's disease are found in many cases showing a partial acromegalic tendency, such as prognathism, cheironmegaly, and in the confluent elephantiastic form of the disease, as well as in the few cases in which generalized fibromas appear with outspoken acromegaly. The latter, six in number, are the cases of Feindel and Froussard [22] (1899), Piollet [23] (1902), Cushing [24] (1912), Nicolas and Favre [25] (1910), de Castro [26] (1912), and Wolfsohn and Marcuse [27] (1912). The cases of the two latter (de Castro, and Wolfsohn and Marcuse) both showed typical pigmentation and generalized tumors, together with typical acromegaly. Both were characterized by nervous phenomena; headache, pains in the limbs, psychic depression, sexual frigidity and general asthenia. Wolfsohn and Marcuse found that roentgenoscopy of the sella turcica showed an increase of measurements from normal to abnormal within three

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19. Guinon, L., and Reubsäet: Un cas de maladie de Recklinghausen fruste, Soc. pédiat. **9**:263-267 (June 16) 1907.

20. Preiser, S. A., and Davenport, C. B.: Multiple Neurofibromatosis (von Recklinghausen's Disease) and Its Inheritance, Cold Spring Harbor, 1918.

21. Poisson and Lebat: Maladie de Recklinghausen, Gaz. méd.-chir, Nantes, May 3, 1913, p. 357.

22. Feindel, E., and Froussard, P.: Dégénéréscence et stigmates mentaux, malformation de l'ectoderme, myoclonie épisodique, acromégalie possible, Rev. neurol. **7**:46-54, 1899.

23. Piollet, P.: Neuro-fibromatose généralisée, Gaz. d. hôp. **75**:1345-1350, 1902.

24. Cushing, H.: The Pituitary Body and Its Disorders, Philadelphia and London, 1912, p. 148.

25. Nicolas, J., and Favre, M.: Acromégalie et maladie de Recklinghausen, Lyon méd. **114**:786, 1910.

26. De Castro, A.: Sur la coexistence de la maladie de Recklinghausen avec l'acromégalie, Nouv. iconog. de la Salpêtrière **25**:41-44, 1912.

27. Wolfsohn, G., and Marcuse, E.: Neurofibromatosis und Akromegalie, Berl. klin. Wchnschr. **49**:1088, 1912.

months' time. Jeanselme[28] in an article descriptively entitled "Anomalies of the Sight, the Intelligence, and the Skeleton Associated with Generalized Neurofibromatosis," recorded an accompanying narrowness of the sella turcica. Breton[29] (1903), in a case of Addison's syndrome, found at necropsy an enlarged pituitary gland and a sella filled with lymphoid tissue. Spillman[30] found a tumor of the sella, and Mossé and Cavalie,[31] an enlarged and hard hypophysis.

Harbitz (1909) has a valuable article on the allied condition of elephantiasis in connection with generalized neurofibromatosis. He reports a case of a woman, a mongolian imbecile, with an elephantiasis-like growth of the whole thigh and generalized cutaneous tumors. The characteristic mongolian appearance had developed at puberty. Perthes[32] (1902) reports a similar case (which Wolfsohn and Marcuse included in the acromegalic cases) and gives the literature of similar conditions. Alexis Thomson's[33] monograph (1900) has a particularly fine illustration of the condition.

Weber (1909) mentions patients with cases accompanied by bony overgrowth of whom the "elephant man" described by Sir Frederick Treves[34] is the most extreme example.

A single case of generalized neurofibromas associated with Fröhlich's syndrome, dystrophia adiposogenitalis, is reported by Lier[35] (1914) in a boy of 9. Roentgenoscopy showed evidence of a tumor close to the hypophysis.

Thyroid.—Instances of cretinism in patients with Recklinghausen's disease are recorded by Adrian (1903), Strohmeyer,[36] 1844, and Schuh,[37] 1851, 1854 (Adrian, page 461). Schiffner observed true

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28. Jeanselme, E.: Anomalies de l'appareil visuel, de l'intelligence et du squellette a sociées à la neurofibromatose généralisée, Bull. et mém. Soc. méd. d. hôp. de Paris **31**:1136-1139, 1915.

29. Breton, A.: La neuro-fibromatose généralismée, Rev. gen. chir. et thérap. **17**:17-20, 1903.

30. Spillman: Neurofibromatose et tumeurs cérébrale, Gaz. hebd. de méd. **5**:320, 1900.

31. Mossé, A., and Cavalie: Tumeurs multiples de l'encéphale et de la moelle allongée. Neurofibromatose central, Gaz. hebd. de méd. **2**:789, 1897.

32. Perthes, G.: Ein Fall von Fibroma molluscum, vorwiegend der linken Hand mit Steigerung der Knochenwachsthums, Deutsch. Ztschr. f. Chir. **63**: 103-110, 1902.

33. Thomson, A.: Neuroma and Neurofibromatosis, Edinburgh, 1900.

34. Treves, Sir Frederick: Trans. Path. Soc. London **36**:494, 1885.

35. Lier, W.: Ueber Neurofibromatose, Ztschr. f. klin. Med. **80**:261, 1914.

36. Strohmeyer, quoted by Adrian: Centralbl. Grenzgeb. Med. u. Chir. **6**: 461, 1903.

37. Schuh, F.: Ueber die Erkenntnis der Pseudoplasmen, 1851. Pathologie und Therapie der Pseudoplasmen, 1854. Quoted by Adrian, 1903, p. 461.

cretinism in two brothers with the disease (Jullien). Ottolia [38] (1908) regarded his case as cretinoid. Debove [39] (1905) gives the case history of a man with multiple cutaneous tumors, tumors along the course of the nerves, generalized pigmentation, in connection with thyroid infantilism.

Myxedematous persons are found in the cases of Meige and Feindel, and of Pic and Rebattu.[40] At necropsy, Bourcy and Laignel-Lavastine found among other glandular lesions, a typical fibrous goiter, with bloody infiltration and diminution of colloid. Muto [41] also found thyroid changes at necropsy. Ehrmann [42] observed a small thyroid in one case, and the absence of the gland in another. Hallopeau and Ribot [43] report typical pigmentation and tumors in a woman in whom exophthalmic goiter was making its appearance. Schlesinger [44] (1911) saw a case with an associated tetany, the only recorded instance of parathyroid involvement with Recklinghausen's disease.

Suprarenals.—A far from complete review of the literature has disclosed about fifty cases in which a so-called Addisonian syndrome, entirely or partially developed, indicated clinically a suprarenal involvement. Many other cases characterized by these symptoms would doubtless have been found if the reporter's interest had not been entirely taken up by cutaneous and nerve tumors. The author believes that in a great majority of cases of Recklinghausen's disease there will be found certain indications of glandular insufficiencies. A few typical cases showing the clinical picture of Addison's syndrome are detailed:

1. Pic and Rebattu (1907): A man, aged 47; complaint: progressive asthenia; multiple cutaneous molluscous tumors, neurofibromas along the course of the spinal nerves, and widely scattered café-au-lait patches present from birth, together with deep brown punctiform pigmentation of the lower legs; extreme kyphoscoliosis; a myxedematous appearance, caused by infiltra-

38. Ottolia, D.: Considerazioni sopra un caso di morbo di Recklinghausen, Riforma méd. **24**:1243-1247, 1908.

39. Debove: Sur un cas de neuro-fibromatose de Recklinghausen, J. de méd. et de chir. prat. **76**:566-568, 1905.

40. Pic and Rebattu: Un cas de maladie de Recklinghausen, Lyon méd. **108**:636-643, 1907.

41. Muto, A.: Contributo allo studio del morbo di Recklinghausen, Riv. di patol. nerv. **15**:656-670, 1910.

42. Ehrmann: Zwei Fälle von Neurofibromatose, Wien. klin. Wchnschr. **16**: 139-140.

43. Hallopeau and Ribot, A.: Un cas de maladie de Recklinghausen avec prédominance des troubles pigmentaires et volumineuse tumeur profonde, Ann. de dermat. et syph. **3**:613-615, 1902.

44. Schlesinger, H.: Multiple Neurofibroma der peripheren Nerven und der Nervenwurzeln, mit Beinphänomen, Mitt. d. Gesellsch. f. inn. Med. u. Kinderh. **10**:124-125, 1911.

tion of the integument down to the shoulders; intellectual faculties formerly intact, weakened. The extreme asthenia was accompanied by hypotension and vasomotor troubles evidenced by Sergent's white adrenal line.

2. Ottolia (1908): A small underdeveloped man, cretinoid; scoliosis and deformation of bones of head; generalized tumors; pigmentation all over the body including the buccal mucous membranes; intellectual inferiority; slowness of movements; obtused and diminished sensibilities.

3. Thiebièrge[45] (1898): A woman, aged 56; pigmented patches small and large, identical with those of neurofibromatosis, over trunk since birth; no tumors, extreme asthenia and gastric troubles for two years; with onset of this condition there occurred generalized discoloration of the skin of the face and body; alteration of character, melancholia, loss of memory.

4. Thiebièrge: A man, aged 50; typical tumors and deep brown pigmentation; gastric trouble progressive to death.

5. Jullien[46] (1910): A woman, aged 43; tumors at 2½ years of age; pigmentation and bronzing of the face at 7; irregular menstruation; at puberty, headaches, gastric distress and vomiting. At present, pigmentation of neck and hands, Addisonian mask, large pigmented patch on mucous membrane on inside of cheek; gastric disorders; lumbo-abdominal pains; quickly fatigued. There was a recurrence in situ of a plexiform neuroma removed from the hypogastrium.

6. Kahn[47] (1910): A man, aged 42; at the age of 33 pigmentation and multiple tumors occurred; since that time there have been anorexia, vomiting, lumbar pains, exophthalmos, asthenia and pulmonary tuberculosis. Kahn reports this case as one of Addison's disease, but the tumors, the absence of pigmentation on the mucous membranes and the lack of necropsy findings fail to support this diagnosis.

Such is the picture—one of degeneracy and lack of resistance. The exciting causes which bring into activity the underlying tendencies (congenital, hereditary, or familial[48]) in these persons, may be any one of many varying stimuli, such as puberty, pregnancy, the menopause, trauma and infections—such as typhoid fever or tuberculosis—but I believe that the stimulus, whatever it may be, is purely accidental, and that only the inherent tendency is constant.

NECROPSIES IN WHICH THE GLANDS OF INTERNAL SECRETION HAVE BEEN EXAMINED

So far as the writer knows, there have been fourteen necropsies with examination of the ductless glands. Twelve of these were cases

45. Thiebièrge, G.: Un cas de maladie de Recklinghausen sans fibromes cutanées ni fibromes nerveux, Soc. méd. hôp. de Paris **15**:143-149, 1898.

46. Jullien, A.: Neurofibromatose généralisée, Thèse, Paris, 1910.

47. Kahn, I. N.: Report of a Case of Molluscum Fibrosum, Addison's Disease and Pulmonary Tuberculosis, New York M. J. **2**:114, 1910.

48. As regards the familial character of Recklinghausen's disease, Preiser and Davenport found that out of 115 children of parents affected with neurofibroma, fifty (43.5 per cent.) were affected with the disease.

in which a more or less complete Addisonian syndrome had been found; two cases lacked such phenomena. In twelve of the cases, or 85 per cent., including the two without Addison's syndrome, involvement of the suprarenals and other glands was found. In two cases, both of which clinically indicated suprarenal involvement, there were only minor histologic changes in the suprarenals.

The proof of glandular dystrophies offered by changes in the glands found at necropsy, even though so large a proportion of the few cases examined were positive, is, nevertheless, interesting rather than convincing; even in undoubted Addison's disease, the suprarenals are occasionally intact at necropsy. Furthermore, as is well known, a general dysfunction of the glandular system may be clinically manifest for a considerable time before any great changes appear in the structure of the glands. No stronger proof of glandular involvement is needed than the clinical conditions shown. However, as the necropsy examinations in question have not formerly been assembled, they are here detailed, together with a case in which a tumor of the suprarenals was found in a living subject afflicted with neurofibromatosis.

Necropsy Examinations.—1. Chauffard[49] (1896): A man, aged 37; pigmentation, neurofibromatosis; increasing digestive disturbances; death, cachetic marasmus. Necropsy: voluminous adenomatous tumor of cortical origin, involving pancreas, suprarenals and lymphatic ganglions; capsular degeneration. Absence of tuberculous transformation of suprarenals characteristic of Addison's disease.

2. Branca[50] (1897): A case of Marie's disease; a man, aged 43, alcoholic, had multiple pigmented nevi; molluscous tumors; cachetic; tuberculous; intelligence and memory diminished; speech embarrassed. Necropsy: Kidneys red, hard, small; cysts and adhesive capsule; suprarenal capsule congested; no sympathetic nerve involvement.

3. Marie and Couvelaire[51] (1900): Adult male; disease developed late after freezing hands and feet; progressive asthenia; neurofibrosis, becoming generalized with pigmentation; alterations of sensibility; nervous troubles—apathy, anorexia, etc. Extreme skeletal changes; photographs show appalling progressive kyphosis. Death, extreme asthenia. Necropsy: Osteomalacia; intestinal fibromatosis; pancreas sclerotic; splenic artery extremely sclerosed; spleen hard; suprarenal cortex intact.

4. Bréton (1903): A man, aged 48; complaint, extreme asthenia; five years previously, attack of pain in hands and feet; when pain receded, generalized subcutaneous tumors appeared with pigmentation and nevi; no tumors along nerve trunks; had always been sexually frigid; death, profound marasmus.

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49. Chauffard, A.: Dermo-fibromatose pigmentaire (ou neuro-fibromatose généralisée). Mort par adénome des capsules surrénales et du pancréas, Soc. méd. et chir. prat. **76**:566-568, 1905.

50. Branca, A.: Neuro-fibromatose intestinale, Soc. Anat. Par. **72**:166-173, 1897.

51. Marie, P., and Couvelaire, A.: Neuro-fibromatose généralisée, Autopsie, Nouv. iconog. de la Salpêtrière **13**:26-40, 1900.

Necropsy; Suprarenal capsules replaced by two masses of sarcomatous tissue; spleen, kidneys and lymphatic ganglions involved; no tuberculosis. Sella turcica occupied by voluminous lymphoid tissue; pituitary gland size of large bean.

5. Bourcy and Laignel-Lavastine (1905): A woman, aged 58; tumors at 15, increased after marriage; generalized lentigo; molluscum pendulum after menopause; many infections; pains, cramps, formication, changes in sensibility; asthenia. Death, after five years. Necropsy: Fibrous goiter; changes in suprarenals, spleen and kidneys.

6. Merk[52] (1905): A man, aged 34 (?); neurofibromatosis and pigmentation; intellect diminished; asthenia. Necropsy: Changes in left suprarenal.

7. Raymond and Alquier[53] (1908): A woman, aged 74; cutaneous fibroma; pigmentation; no neuromas; headaches; vertigo; profound asthenia. Necropsy: Suprarenals occupied by generalized sclerosis; at one point that had escaped sclerosis, there was a hyperplastic nodule of spongiocytes; kidneys sclerotic. Hypophysis showed alternating layers of sclerosis and hyperfunctionating tissue.

8. Jullien (1910): A man, aged 70; pigmentations and molluscous tumors since birth; augmentation at puberty; extreme asthenia; apoplectic death. Necropsy: Suprarenal capsules voluminous with brown points of epithelial hyperplasia; spleen, voluminous, sclerotic.

9. Muto (1910): A woman, aged 53; gross tumor from infancy; in mature life, generalized eruption of small papules, 3,000 at death. No nervous symptoms. Death, general marasmus. Necropsy: Intense pigmentary infiltration of all the cortical zone of the suprarenals; modification of cervical sympathetic. Histologic changes of pituitary and thyroid.

10. Vignolo-Lutati[54] (1911): A man, aged 25; pigmentation at birth; skin tumors at puberty. Three years before death, loss of strength, cramps, nausea, vomiting, bronzing of face. Death, cachexia. Necropsy: Sclerosis of the suprarenals.

11. Orzechowski and Nowicki (1912): A girl, aged 18; multiple neurofibromatosis; menstruation never established; intelligence low; troubles of eye and ear. Necropsy: Chromaffin system hyperplastic; pituitary gland only slight abnormalities.

12. Saalman[55] (1913): A woman, aged 35; typical Recklinghausen's disease. Death from pulmonary embolism after operative removal of elephantiasic tumor from the arm. Necropsy: Hypernephroma, originating in a suprarenal rest, found in liver. Suprarenals normal.

13. Bosquet[56] (1913): A man, aged 46; cutaneous and nerve tumors; skin a uniform dirty yellow as in Addison's disease; inferior psyche; sexual

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52. Merk, L.: Ueber die multiple Neurofibromatose, Arch. Derm. u. Syph. **73**:139-145, 1905.

53. Raymond, F., and Alquier, L.: La maladie de Recklinghausen. Ses variétés nosolgiques, L'Encephale **3**:6-35, 1908.

54. Vignolo-Lutati, C.: Recklinghausenschen Krankheit, Monatschr. f. prakt. Dermat. **52**:51-70, 1911.

55. Saalman: Ueber einem Fall von Morbus Recklinghausen, mit Hypernephrome, Virchows Arch. f. path. Anat. **211**:424, 1913.

56. Bosquet, T.: Maladie de Recklinghausen et capsules surrénales, Echo méd. du Nord **17**:329-332, 1913.

frigidity; anorexia; pains in extremities; profound asthenia. Necropsy: Right suprarenal almost entirely transformed into an epithelial tumor; polymorphic cells; cystic and hemorrhagic formations.

14. Preiser and Davenport (1918): A man, aged 45; after lead poisoning, twelve years previously, generalized tumors and pigmentation; headache; dizziness, palpitations, vomiting, generalized pains. Death, general asthenia. Necropsy: Pigmentation of liver and spleen; slight histologic changes in suprarenal, pituitary and thyroid glands.

15. Kawashima[57] (1911): Woman in puerperium; multiple cutaneous and nerve tumors; marked kyphoscoliosis. Tumor of suprarenal medulla consisting of atypical hyperplasia of giant multinuclear cells.

TREATMENT BY OPOTHERAPY

This should apparently be a suggestive subject, but the literature contains next to nothing on it. Revilliod,[58] 1900, in a typical case of Recklinghausen's disease with Addisonian syndrome, controlled the symptoms by use of suprarenal extract. When the extract was discontinued, the asthenia reappeared, and disappeared again when suprarenal extract was again used. Gabriel,[59] 1911, reported good results in two patients also with the use of suprarenal extract. Preiser and Davenport obtained no results with either thyroid or suprarenal extract in their case in which death occurred from progressive asthenia. One case is reported (Schoonheid[60]) in which ovarian extract was tried without effect.

In diseases of somewhat similar type, adiposis and lipomatosis, Lyon[61] states that thyroid preparations have given better results than any other medication, and that other forms of glandular therapy should also be tried. As is obvious, the glandular field of therapy is practically untouched in Recklinghausen's disease, and should be given a thorough trial, especially as epinephrin, thyroid and pituitary extract have all given good results in the condition of osteomalacia, which so frequently attends the disease.

REPORT OF A CASE

Recklinghausen's Disease with Evidences of Endocrinic Dysfunction

History.—A white unmarried girl, aged 20, born in the United States, and having no regular occupation, was admitted, March 8, 1919, to the Skin Clinic of the Beth Israel Hospital, complaining of progressive cutaneous troubles.

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57. Kawashima, K.: Ueber einem Fall von multiplen Haut fibromen mit Nebennierengeschwulst. Ein Beitrag zur Kenntnis des sogennanten Morbus Recklinghausen, Virchows Arch. f. path. Anat. **203**:66-74, 1911.

58. Revilliod, H.: De la neurofibromatose généralisée et de ses rapports avec l'insuffience des capsules surrénales, Thèse, Genèva, 1900.

59. Gabriel: Fall von Recklinghausen'scher Krankheit mit Osteomalacie, Berl. klin. Wchnschr. **48**:133-134, 1911.

60. Schoonheid: A Case of Multiple Neurofibromatosis of the Skin, Nederlandsch Tidjschr. v. Geneesk. **2**:1639, 1913.

61. Lyon, I. P.: Adiposis and Lipomatosis, Arch. Int. Med. **6**:28-120, 1910.

Her father and mother were alive and well; her maternal grandparents died of old age; her paternal grandfather, 76 years of age, was well; her paternal grandmother died of a disease the nature of which was unknown; one brother and three sisters were alive and well; another brother was suffering from a nervous breakdown due to recent business troubles. There was no history of miscarriage or of dead brothers or sisters. Syphilis, tuberculosis and cancer were denied.

The patient had had measles in early childhood; she had had no other infectious diseases, but gave a history of constant complaints and suffering from minor ailments. For several years there had been severe drawing frontal headaches; these appeared weekly, lasting for three days, and were worse on rising. During damp and changing weather, there were indefinite pains in the extremities. For the past eight years the vision of the left eye had been gradually decreasing. For three years she had suffered once a fortnight, from attacks of weakness, faintness and precordial pressure of one day's duration. Appetite and digestion were poor; there was no increased frequency of urination, excepting occasionally at night. During the past year, nocturnal restlessness and insomnia had been present. The patient had always had difficulty in learning; she did not progress with her classmates, and was finally compelled to leave school while still in a low grammar grade. She had always had attacks of depression and melancholia.

Menstruation, which began at the age of 14, was regular every four weeks, lasting three days and accompanied by severe bearing down abdominal pains during the first two days; the flow on the first day was profuse, but was scant for the remaining period.

Cutaneous Conditions.—The mother stated that while the patient was but a few months old it was noticed that the right side of her face seemed to grow more rapidly than the left, and that it was of a darker color. This nevoid growth increased in height and extent; it finally spread down the neck to the collar bone. At the age of 4, freckles appeared on the skin of the trunk; these increased rapidly in number and distribution so that the face, neck, trunk and extremities became covered with numerous yellow and brown spots. Round, painful tumors later appeared on the scalp and the lower vertebral region and were excised when the patient was about 8. In 1915, when she was about 16, she was in Mount Sinai Hospital, from March 1 to 15, for the removal of painful tumors of the dorsal and sacral regions. The pathology of these growths was that of neurofibroma. At this period, 1915, the pigmented nevus on the face and neck had become darker in color and was covered with small warty growths and painful soft tumors resembling those of the back and scalp; the latter were also removed. In 1919, two months prior to her admission to the clinic, the painful tumors on the face and neck began to recur.

General Examination.—The patient was short and obese, with mental and physical underactivity. Her movements were slow and clumsy; she answered questions with difficulty; the facial expression was stupid and she never smiled. The head was large; the face, flat and asymmetrical and drawn to one side in talking. The nose was broad; the lips, thick; the right half of the tongue, hypertrophied. The ears were large, and the right auricle was involved by the nevoid lesion of the face and neck. The upper and lower jaws were enlarged; there was a wide space between the two upper central incisors and a small space on each side between the middle and lateral incisors; the canine teeth were small, pyramidal and pointed. The fingers were short and thick and show hyperextensibility.

Examination of the nose, eyes, ears and throat revealed nothing abnormal. The neck was short and fat, and the thyroid gland was of moderate size and soft. The lungs, heart, spleen and liver were apparently normal. The breasts were large and pendulous. The temperature was normal; repeated pulse rate determinations varied between 72 and 80 a minute; the respiratory movements were normal. The blood pressure varied from 106 to 122, systolic, and 60 to 66, diastolic; it was not taken during any of the attacks of faintness, and possibly at these periods it might have been much lower. Stroking the skin produced a mild erythema which disappeared rapidly.

Repeated urinary examinations disclosed nothing abnormal. Chemical examinations of the blood gave these results: blood sugar, 0.07 per cent.; carbon dioxid, 60 per cent.; urea nitrogen, 8 per cent.; nonprotein nitrogen, 30 per cent.; creatinin, 1.2 per cent. The low level of the normal blood sugar finding and the low urea nitrogen content indicate a tendency to a diminished metabolism. The Wassermann reaction, the tuberculosis and the gonorrhea complement-fixation tests of the blood were negative, as was also the radiograph of the skull.

Fig. 1.—Pigmented nevus on face and neck of author's patient.

Dermatologic Examination.—The general cutaneous surface showed the presence of uncountable yellow, café-au-lait and dark brown macules, round, oval and irregular in shape, and varying in size from that of a pin-point to that of a quarter dollar. These were most numerous on the trunk and less in number on the face, neck and extremities. There was no pigmentation of the buccal mucous membranes. There was increased pigmentation, especially at the nipples, the anterior axillary folds and points of pressure. Covering the right half of the neck from the midline in front to the anterior border of the trapezius, there was a dark brown, elevated soft growth, with a surface of pedunculated and nonpedunculated soft, warty papules, ranging from the size of a pinhead to that of a large pea, some of which were tender on pressure. This nevoid growth extended up the cheek over the lower maxillary region and down to the clavicle. An egg-sized pendulous mass, tender to pressure, was situated on the upper posterior portion. From the upper anterior portion depended a large orange-sized, pigmented, soft, tender mass which gave a

larger and lower aspect to the right side of the face than the left. The auricle of the right ear was also disproportionately large, as its lower one-third was hypertrophied, pigmented, thickened and extended into the nevoid growth. A 3 inch linear scar ran parallel to and over the lower maxillary bone.

Situated about the middle of the sternum there was large pea-sized, globular, doughy painless tumor which could be compressed, and imparted to the finger a sensation as if it were growing through a hernial ring in the skin. Nowhere else on the skin was another fibroma of this nature found.

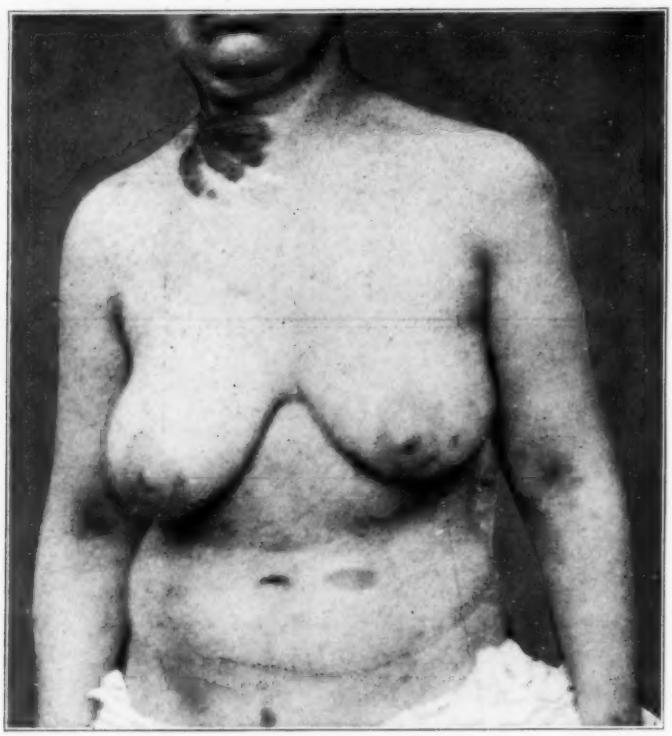

Fig. 2.—Dark brown macules on body and arms of patient.

The hair of the scalp was brownish-black, dry, curly and thick, and extended down the temples almost to the eyebrows. The scalp itself was the site of a seborrheic eczema. In the right parietal region there was a 3-inch round, flat smooth scar devoid of hair, the result of an operation for the removal of a painful growth. The eyebrows were heavy, shaggy and wide, but thinned in the outer one-third. The space between the eyebrows was wide and partially covered with hair. There was a moderate hypertrichosis with the presence of hair on the chin, abdomen and back, while the axillary hairs formed a dense bushy growth. Several linear scars were present in the mid-dorsal and sacral regions where painful tumors had been removed.

Course and Treatment.—This case was presented at the meeting of the Manhattan Dermatological Society, March 11, 1919, with the diagnosis of Recklinghausen's disease. There were some doubts expressed as to the correctness

of the diagnosis, because of the absence of neuromas and fibromas. Dr. Wise, however, agreed with the author that the pigmentation, the nevus and the one fibroma of the chest fully justified the diagnosis. As a matter of fact, in spite of the lack of tumors, this was an outspoken case of Recklinghausen's syndrome, one of the well-known formes frustes, but destined, as so many of them are, to develop a fuller cutaneous picture.

The patient was irregular in attendance at the clinic, and indifferent to treatment except to that which would give relief from pain. Organotherapy was attempted but it was impossible to test its value in so unreliable a patient. In April, 1920, she appeared complaining of severe pain in the pendulous masses of the face; this was relieved by large doses of coal-tar analgesics. At this time, there were found about two dozen pedunculated, soft, pigmented fibromas, from pinhead to lentil-size, on the right side of the abdomen. In December, 1920, she returned with a request for the removal of the disfiguring masses of the face. Examination of the skin revealed several new large pea-sized fibromas of the right forearm; the small fibromas of the abdominal skin had disappeared, but several, flat, hardly elevated, soft, purplish, hernial growths were found instead. A plastic operation is to be performed on the face and radium is being applied to the nevoid growth. It is hoped that she may agree to try organotherapy.

Summary.—A report has been made of a case of Recklinghausen's disease showing evidences of pluriglandular dyscrasia, with stigmas of suprarenal and pituitary dysfunction predominating. Beginning early in life, there were indications of suprarenal disorder in the form of cutaneous pigmentations, painful new growths, and physical and mental weakness; the history and the physical findings suggest Addison's disease. The abnormal anatomic markings point to faulty pituitary activity. The thyroid gland and the gonads appear to have played only minor rôles in the production of the picture.

The cutaneous symptom, pigmentation, is generally accepted as depending on a disturbance of the chromaffin system, of which the suprarenals are an important constituent. According to Lyon (page 107), pigmentation has long been considered as symptomatic of insufficiency of the suprarenal (nervous) cortex. It is present in many other conditions besides Recklinghausen's disease, "having known or supposed relations with certain glands of internal secretion, e. g., acromegaly, exophthalmic goiter, myxedema, Dercum's syndrome, adiposity and lipomatosis, . . . arthritis deformans, bronzed diabetes, uterine and ovarian affections, etc." It "suggests a possible relation to the suprarenal glands or to the chromaffin system in general." The fibromas, neurofibromas, plexiform neuromas, and nevi depend for their presence on a congenital or local predisposition and a faulty endocrine-sympathetic system.

It has been shown that the cortex in man constitutes about 90 per cent. of the suprarenal gland, and that in lower animals it is much smaller. The more developed intellectually is the person the more developed is the brain, and the larger is the cortex of the suprarenal glands. It is therefore possible that the mental symptoms in Recklinghausen's disease have some relation to some trouble in the suprarenal cortex.

The following tabulation gives a tentative suggestion of the relationship between the various symptoms of the case to the various endocrines.

Suprarenals: Attacks of weakness, faintness and precordial pressure; hyperesthesia; muscular pains; poor vasomotor tone-diminished skin stroking reaction, low blood pressure; diminished metabolism—low blood sugar and urea nitrogen; anorexia; nocturnal frequency of urination; insomnia; mental

symptoms; abnormal hair growth—hypertrichosis of face, back, axillae, abdomen and between the eyebrows; obesity; dermatologic condition—pigmentation, fibromas, neurofibromas, nevus.

Pituitary: Periodic, frontal headaches; poor vasomotor tone; low blood sugar; nocturnal frequency of urination; insomnia; mental symptoms; low downgrowth of hair of scalp; structural defects—short and obese, shape, size and asymmetry of face and head, prognathism, enlarged right ear, spacing and character of teeth, hyperextensibility of fingers.

Thyroid: Hyperesthesia; poor vasomotor tone; low urea nitrogen; thinned outer one third of eyebrows; obesity.

Gonads: Menstrual symptoms; abnormal hair growth; obesity; dull lethargic mentality.

COMMENT

Ewing,[62] writing on the origin of fibromas, states that the exact point of origin is still undetermined. That many of them arise from misplaced islands of tissue according to Connheim's theory, is very probable. Other fibromas may depend on local irritation and disturbance of nutrition. In a third group, the clinical features point to a congenital or local predisposition, of which multiple neurofibroma is the best example. It is especially in the second and third etiologic classes that one encounters the less definite tumorlike processes which it is sometimes difficult to classify, and in which one must recognize the cumulative influence of inflammations and chronic disturbance of nutrition and the passage of inflammatory into self-perpetuating neoplastic processes. Recklinghausen showed that the fibroma molluscum arises from the cutaneous nerve filaments. In 1882, he traced degenerating nerve fibers in several characteristic cases and stated that all these tumors arise from nerve trunks or filaments.

"Many authors trace a connection between neurofibroma and many angiofibromas and naevi. They are sometimes associated with xanthoma (Delore, Poncet), and rarely with multiple lipoma (Vallas, Mouchet). Some early lesions suggest an origin from the connective tissue about the sweat-glands, but even here the process has been traced from nerve fibers belonging probably to the sympathetic system." Ewing also asserts that "it is probable that the great majority of actively growing fibromas and fibrosarcomas of the limbs are of neural origin."

"It is generally assumed that the victims of fibromatosis are the subjects of congenital malformation of the ectoderm which under a great variety of exciting causes may slowly or rapidly develop one or more of the manifestations of the disease."

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62. Ewing, J.: Neoplastic Diseases, New York, 1919, p. 151.

The Italian endocrinologist, Pende,[63] has presented a most suggestive theory as to the causation of Recklinghausen's disease—a theory which is particularly interesting in view of the facts set forth in the present article. Pende [64] (1909) expressed his opinion (with, to quote Muto, "many learned arguments") that the sympathetic nervous system and the glands of internal secretion constitute two physiologically and pathologically synergic systems, so that a morbid process localized in one system makes its effects felt in the other; he maintains that a whole series of affections which have been included either under diseases of the nervous system or in the group of disorders of the glands of internal secretion should be combined into one family group of endocrine-sympathetic dystrophies. The common symptomatic picture would consist essentially of a more or less complex dystrophy (disturbances of metabolism and anomalies in tissue development), accompanied by symptoms due to disturbances in the functioning of one of the endocrinic glands. Among such dystrophies, he places scleroderma, chronic dystrophic rheumatism, painful lipomatosis and neurofibromatosis. For the production of these conditions, two factors are required: (1) a constitutional factor represented by an abnormality of the endocrine-sympathetic system, which may be hereditary, intra-uterine, or extra-uterine during the period of growth; and (2) an accidental factor, such as shock, trauma, toxic poison, infection, etc., which through its effects on the endocrine-sympathetic system acts as a stimulus to embryonal elements of the sympathetic system and the skin.

Much the same idea is expressed by Lyon,[65] who concludes that the various clinical groups of fatty deposit, Dercum's syndrome, the lipomatoses, "adipositas cerebralis," etc., are essentially identical, being only variations of a common morbid process. "They all show a tendency to be characterized by constitutional symptoms of wide variety including especially psychic, sensory, motor, vasomotor, secretory, and trophic manifestations." Special attention is called to various arthralgic and arthritic and neuralgic and neuritic manifestations as belonging to the constitutional symptomatology of the morbid process.

The etiology of the process, thus broadly considered is unknown. Only two views, connecting the process with disturbances of the nervous system or of

63. Pende, N.: Sistema nervoso simpatico e glandole a secrezione interna, Il Tommasi **31**: 1909. Pathologia dell apparecchio surrenale e degli organi parasimpatica, Soc. Editrice Libraria, 1909. I nuovi orizzonti della fisopatologia delle secrezioni interne, Med. ital. **6**:129-132, 153-157, 1910.

64. The translations from Pende are from exact quotations found in Muto's article, Riv. di patol. nerv. **15**:656-670, 1910. The original sources were not available.

65. Lyon: Adiposis and Lipomatosis, 1910. In this work Lyon makes no specific mention of Recklinghausen's disease, but what he says is equally applicable to this condition, and is quoted here for this reason.

the glands of internal secretion, seem broad enough to harmonize with all the facts. These two views are not necessarily opposed, but can be resolved into one, by assuming that the nervous system is secondarily disturbed by a primary disturbance in the glands of internal secretion, or vice versa. The pathological findings and the general evidence suggest the view that the process is related to alterations in the glands of internal secretion, many writers laying special stress on implication of the pituitary gland in the pathogenesis.

However, the complex mutual relationships between all the glands suggests that one or more or all of them may be concerned in the pathogenesis, and that the variation in symptomatology of the different groups and cases may depend on the varying degrees of involvement of these several glands and the nervous system.

As experimental work tending to show the relationship between the internal secretions and the production of tumors, pigmentation, etc., in conditions such as Recklinghausen's disease is almost prohibitive, it is interesting to note, even though the bearing be remote, the conclusions of Loeb [66] on the internal secretions as a factor in the origin of tumors in mice. He found that for the development of cancer three factors were necessary: (1) the hereditary, (2) the physical stimulation, irritation, and (3) the chemical stimulation, the internal secretions. The internal secretion seems to cause cancer only in cooperation with hereditary factors. On the other hand, hereditary factors need, at least in some cases, the cooperation of hormones in a definite quantity, if cancer is to develop.

CONCLUSIONS

In view of the previously reported cases, and my observations in other cases as well as in the one here reported, I believe: (1) that Recklinghausen's disease is a complex of cutaneous and general symptoms depending essentially for its etiology on endocrine dysfunction.

(2) That the great majority of cases would show definite signs of endocrine-vegetative disorders, if they were carefully examined for these findings.

(3) That all cases of Recklinghausen's disease tend finally to develop such symptoms, unless there is some compensatory halting of the glandular dystrophy, and that eventually death, unless from intercurrent diseases, will in all probably result from progressive asthenia.

(4) That the term neurofibromatosis should not be used synonomously with Recklinghausen's disease, as neurofibroma or fibroma constitutes only one type of the cutaneous lesions.

(5) Pigmentation is a frequent skin lesion and may be present without any signs of fibromatosis.

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66. Loeb, L.: Internal Secretions as a Factor in the Origin of Tumors, J. M. Res. **40**:477, 1919.

(6) A syndrome covering a multiplicity of symptoms must be designated by a term broad enough to include them all. At the present time we have no better name than Recklinghausen's disease.[67]

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67. In addition to the references already given, the following cases in which endocrine dysfunction is apparent, may be of interest:

Gatti, L.: Ueber psychische Störungen im Verlaufe der Recklinghausen'schen Krankheit, Neurol. Centralbl. **32**:1027, 1913.

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Merle, P.: Maladie de Recklinghausen et rétraction de l'aponevrose, Rev. neurol. **17**:354 and 356, 1909.

Morestin, H.: Fibrosarcome de la jambe chez une femme atteinte de maladie de Recklinghausen, Bull. et mém. Soc. anat. de Par. **16**:79-85, 1914.

Morris, M., and Fox, W.: A Case of von Recklinghausen's Disease, Brit. J. Dermat. **19**:109-115, 1907.

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Roubinovitsch and Regnauld: Deux cas de neurofibromatose familiale dont un avec cheiromégalie unilatérale, Nouv. Iconog. Salpêtrière **27**:327-332.

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Soquet: Démence et Neurofibromatose généralisée, Soc. méd. légale, April 14, 1913.

Thomas, H. M.: A Case of Neuro-Fibromatosis (von Recklinghausen's Disease) with Paralysis and Muscular Atrophy of the Arms and Legs, Johns Hopkins Hosp. Bull. **14**:204-207, 1903.

Touche: Un cas de maladie de Recklinghausen, Rev. neurol. **21**:398, 1911.

Viegas, L.: Contribuiçao para o estudo da doença de Recklinghausen, Anais Sc. Facult. Med. do Porto **1**:75, 1913.

Vignolo-Lutati, C.: Sindrome addisoniana in una forma incompleta di Recklinghausen **32**:1061-1064, 1916.

RADIUM TECHNIC IN THE TREATMENT OF MALIGNANT DISEASES OF THE SKIN

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During the past few years radium has come to occupy an important position in the treatment of malignant diseases of the skin. The literature on this phase of radium work is so abundant that it would seem more important to devote time to a discussion of technic rather than to a further discussion of its merits in this field. With this in mind, I present, in part, at least, the methods employed at the Memorial Hospital. Since it is frequently easier to illustrate a method than to describe it, considerable use has been made of photography in an effort to show the types of lesions found best suited to various forms of application.

Skin lesions are so readily accessible that one of the most serious handicaps in the use of radium for the treatment of malignant diseases is overcome at the outset. The three important factors to be considered are: the selection of proper filtering materials, accurate approximation of the radium to the lesion, and dosage. Of the three, perhaps accuracy of approximation is the most important factor. Skin lesions are so readily accessible that equally good results may be obtained with a wide range of filtration and dosage. If dosage be not entirely overdone at the start, it can be readily supplemented; but, unless the radium is applied accurately to the entire surface in question, failure will result. If one small portion of the lesion be under-treated, or left untreated, the disease will continue, and the result will be credited as a radium failure. We have long since passed the time when a piece of radium may be placed in the neighborhood of a malignant lesion and a favorable result expected.

The relative variations in structure of these lesions are so great that it is impossible to lay down specific rules for filtration in any particular type of growth. The operator must bear in mind the physical properties of radium and their relation to the type of filter at his disposal. He must also visualize the pathologic conditions in the individual case, and then, by judicious correlation of the two, determine the amount of filtration required to affect the tissues well beyond the limits of the growth, with as little actual destruction as possible. It is possible, of course, to destroy any accessible lesion by the use of unfiltered radium alone, but here the effect is largely one of cauterization and is scarcely superior to the old-fashioned escharotics. A reason-

able amount of destruction, confined to an ulcerated area, is in no way detrimental, but a limit must be placed on the amount of gross destruction in the neighborhood of normal tissues. Fortunately, cancer cells have a greater susceptibility to radiation than does normal tissue, so that it is possible to destroy all of the malignant cells within a given area with a minimum of damage to the normal tissues, providing proper methods are used.

At the Memorial Hospital we feel that we are fortunate in being able to use radium emanation exclusively. This in no way alters the procedure or renders it different to that employed by the operator using

Fig. 1.—A case of lupus erythematosus with skin areas partially marked off preparatory to treatment.

the salt itself. It does, however, afford us the advantage of a wide range of usefulness for the radium. It permits of having a large number of tubes of varying strength and of being able to change the emanation tubes from one type of filtering tube or applicator to another without appreciable danger from breakage and loss. It is frequently found advisable to use unfiltered radium emanation and this, of course, can be done without the risk of serious loss from the breakage of a tube, such as would be entailed by an operator using a tube of the salt itself.

FILTERED AND UNFILTERED RADIUM EMANATION

By unfiltered emanation we mean emanation contained in a very fine, thin, glass capillary tube filled and sealed at the ends. Since the alpha rays of radium have a penetrating power of approximately 0.8 mm. of water, it will at once become apparent that the thin wall of the glass tube removes practically all of these rays. The unfiltered tubes may, therefore, be used for the purpose of obtaining an intense beta ray radiation with comparatively little gamma ray effect, since the latter are very much less in amount than the former. The beta rays of radium have a penetrating power equivalent to approximately 3 mm. of water or 250 cm. in air. Water has been selected as a medium for comparison since it bears some relation to the penetration in body tissues. By the interposition of various thicknesses of filtering metal we are able to remove a part or all of the beta rays, and, by increasing the thickness of filters, a large percentage of the gamma rays. By visualizing the pathologic condition to be overcome as far as possible, it is possible to select a filter which will afford the necessary protection

Fig. 2.—Two types of wooden applicators with the unfiltered radium emanation tubes held in place by paraffin.

against the softer rays and still permit the passage of a sufficient quantity of more penetrating rays to radiate thoroughly the area in question. While in our physical laboratory a large number of metals have been studied experimentally, in the practical side of the work we have found it advantageous to confine ourselves to a few metals of various thicknesses as filters. For example, 0.2 mm. of aluminum removes approximately 25 per cent. of all radiation. This means that most of the softer beta rays are removed, but only a negligible quantity of gamma rays. Aluminum is an excellent material to use when such a light filter is required, but for greater filtration it is more practical to use a heavier metal, thereby obviating the necessity for increasing the thickness to a considerable extent. The filter which we employ more frequently than any other in the treatment of skin lesions is 0.5 mm. of silver. This removes about 95 per cent. of all radiation. Practically all of the beta rays are cut out, but we have left a wide range of gamma radiation. By increasing the filter to 1 mm. of platinum, 97 per cent. of all radiation is excluded. Apparently this variation of 2 per cent. amounts to little, but if we consider the fact that the therapeutic rays

are those which penetrate the filter, it will readily be seen that there is considerable difference between the half millimeter of silver and the millimeter of platinum. With the former, 5 per cent. of the total radiation reaches the tissue, whereas with the latter only 3 per cent. is available, which permits the use of a much heavier and more penetrating dose in comparison to the superficial absorption produced. The variations between 0.5 and 1 mm. of platinum and between 1 and 2 mm. of platinum are so slight that they need not be considered from the standpoint of dermatologic work. The only radiation we employ which is

Fig. 3.—The applicators illustrated in Figure 2 in place.

unfiltered, in the strictest sense of the term, is an active deposit of radium prepared by exposing a thin piece of lead foil to the emanation under pressure for a period of time sufficient to permit as large an amount of deposit as the concentration will afford. This product is unstable in that it deteriorates rapidly, but it affords a means of radiating a surface intensely, if necessary, without any appreciable deeper penetration. We have found certain uses for it which will be described later.

To summarize: We use for practical purposes in our every-day work, in addition to this last mentioned active deposit, the so-called unfiltered or bare tube, which permits us to utilize practically all of the

beta and gamma radiations: a tube of 0.2 mm. of aluminum, which removes only the softer beta rays and a few of the gamma rays; a 0.5 mm. silver tube which removes nearly all of the beta rays and an appreciable percentage of the softer gamma rays; and a millimeter of platinum which removes all of the beta rays and a large percentage of the softer gamma rays. I have not entered into a discussion of many of the other filters in common use, such as lead and brass, although they are fully as good when used in proper thicknesses. We have used the aluminum because in a thickness for practical use it affords slight filtration. Silver, which as I stated we use most, machines readily, is easily cleaned, and the tube can be easily enameled in various

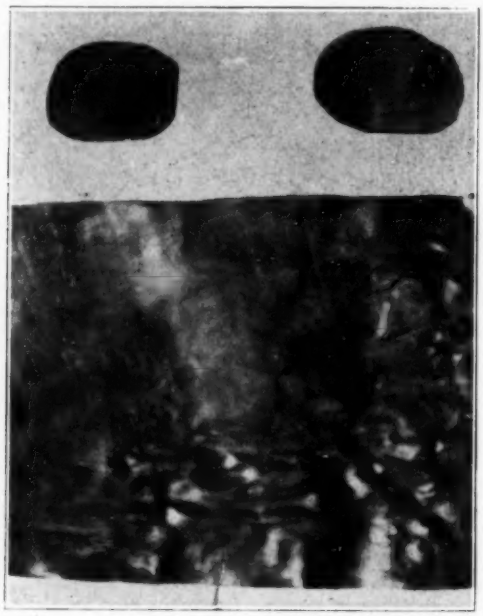

Fig. 4.—Lead foil both cut and uncut and prepared for application to the under surface of the lid.

colors, so that one tube may be distinguished from another. The platinum we have found to be the most practical heavy metal for all-round purposes. With these types of filter we have found it possible to handle the skin work satisfactorily, and consequently we have not considered it advisable to complicate matters by the use of a wider range of either metals or thicknesses of metals.

DOSAGE

As for dosage, it would be almost impossible and totally impracticable to set down any fixed rules of value for individual operators. During the past year, experimental work in our physical laboratory,

under the direction of Mr. Failla, has been directed to this end, and while we hope soon to be able to place dosage on a much more scientific basis than heretofore it is still too early, as well as outside its sphere, to make, in this paper, a report on it. In the earlier part of our work

Fig. 5.—Placing of prepared lead foil, having active deposit of radium on its inner surface, beneath the eyelid.

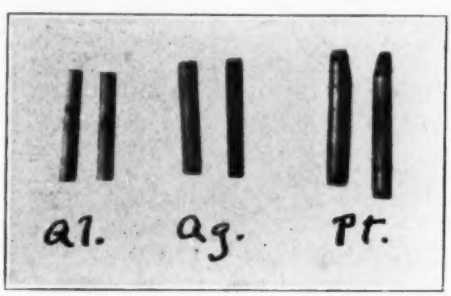

Fig. 6.—Sizes of aluminum, enameled silver and platinum tubes used as filters in dermatologic work.

we arrived at certain empiric doses after long, and in many instances painful, experience, and I daresay this experience has been shared by many other workers. The wide range of filters used by operators in

various clinics makes it doubly hard to arrive at a uniform dosage table for certain types of lesions, and the individual lesion presents so many variations that the task would be well nigh impossible. In general, however, when the filter has been determined on, the dose should be a massive one: that is, a quantity of radiation which will produce a noticeable erythema or even a suggestion of superficial destruction. Since silver has been our most common filter in skin work, we have arrived at an empiric unit of dosage with it, estimating it according to the extent of surface involved. With a filtration of 0.5 mm. of silver placed at a distance of 3 mm. from the surface, a unit dosage of 60

Fig. 7.—Placing tubes in position by embedding them in plastic dental modeling compound.

millicurie hours per square centimeter of surface has been our standard. If the lesion is small, that is, only 1 or 2 sq. cm. in extent, this may be increased to 70 or 75 millicurie hours per square centimeter, whereas if it is much larger, the dose will necessarily have to be reduced below 60 millicurie hours per square centimeter on account of the cross-firing. Several other factors must also be taken into consideration in determining the variations in this empiric dosage, such as the unevenness or curvature of the surface, the type of lesion being treated or the proximity of various vital structures.

While it is of great importance to select a proper filter and consequently a proper dosage, it is of still greater importance to obtain accurate approximation of the radium to the lesion. Radiation at a distance is, of course, more uniform because the rays tend to become more homonomous the greater the distance from the surface to be treated, but this is a method of value in only a small percentage of skin lesions, to say nothing of the expense in wasted radiation. In other words, it is in most instances purely a gunshot procedure.

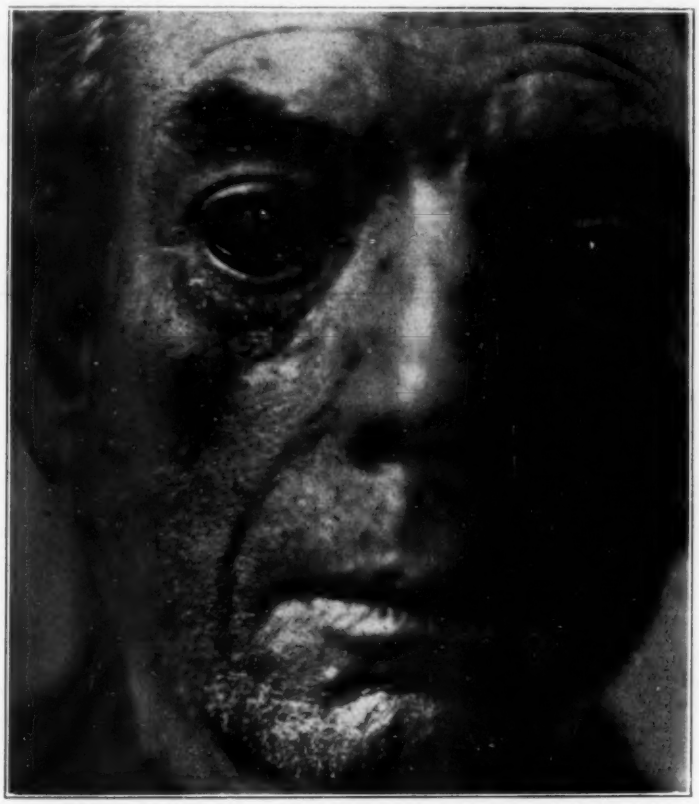

Fig. 8.—Type of small lesion suitable for applying filtered tubes directly on plastic dental modeling compound, allowing it to harden in place, thereby holding the tubes completely in apposition to the lesion.

Accuracy of approximation of the radium to the surface will always give best results with least expenditure of radium, and consequently our efforts should be concentrated in this direction.

VARIETIES OF SKIN ERUPTIONS TREATED WITH RADIUM

In order to illustrate to best advantage the methods of application used, it may be well to discuss certain groups of cases more frequently encountered, indicating the type of applicator used, adding,

if necessary, a few words relative to the filtration and dosage. Our work has been confined almost entirely to the treatment of malignant lesions of the skin, although two or three common and allied conditions have come to our attention so frequently, and have given such good results from the use of radium, that we feel it advisable to include them at this time.

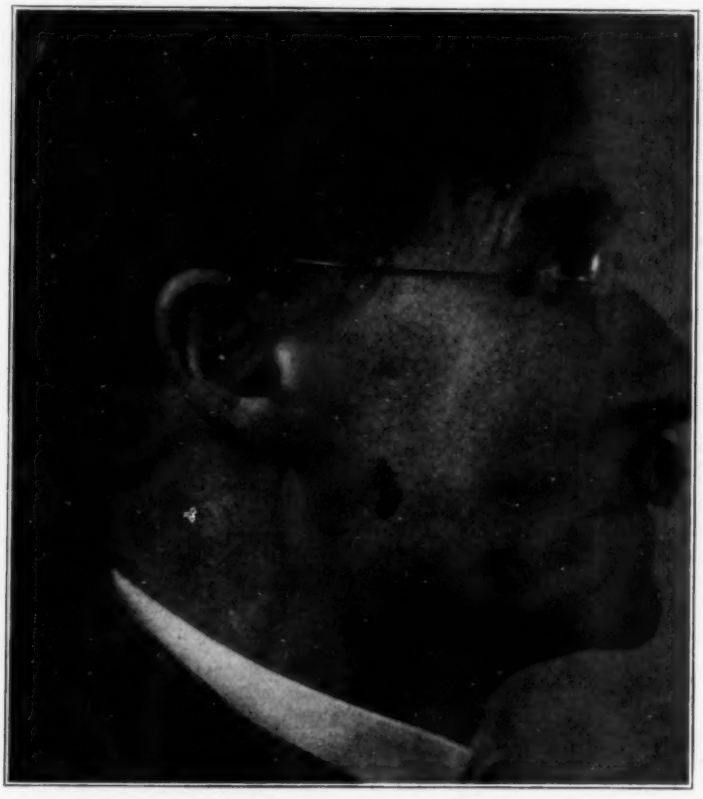

Fig. 9.—Another type of lesion suitable for the same treatment as the lesion in Figure 8.

Lupus of the Skin.—This is a disease that we have been called on to treat rather frequently, and while I doubt if radium is as valuable in this condition as the Finsen light, the results have been fairly satisfactory. The lesion heals with a slight amount of scarring, and only in a small percentage of cases is there a tendency to recurrence. Since the disease is superficial, we have found unfiltered radium the best agent to use in its treatment. Figure 1 shows the skin prepared for the application of radium and indicates the type of applicator used. Radium emanation tubes of equal strength are placed evenly over the

surface of a small wooden block 5 mm. in thickness, and over these tubes a small bit of hot paraffin is poured, which, when cool, holds them readily in place. In case the radium is to be held in place by the hand of the patient or operator, two ordinary wooden tongue depressors may be placed together, held by adhesive plaster and the radium tubes arranged at one end. This affords a handle by means of which the operator or patient may safely hold the radium against the area to be treated. While the 5 mm. of wood remove a small percentage of the

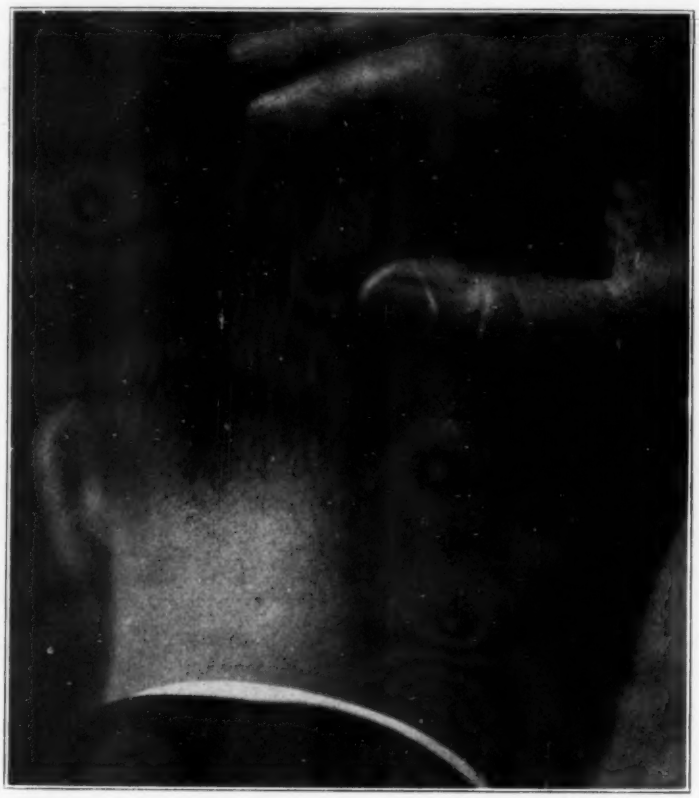

Fig. 10.—Type of lesion requiring protection of the surrounding skin area.

softer beta rays, the chief object is to lend distance to the application. In this way a much more even distribution of the radium is obtained. The area to be treated is blocked off in squares with ink, the squares being slightly larger than the applicator so that there will be no overlapping of the radiation and consequent burning. The applicator may be changed from one of these squares to another after a sufficient dosage has been given. Using this technic, a dosage of 10 to 16 millicurie hours per square centimeter, depending on such varying factors as the

age of the patient and type of skin, has usually been found sufficient to clear up the disease with one application. Figure 3 shows the two types of applicator in place, the one being held by a piece of adhesive plaster and the other by the patient. The former method is advisable unless the areas to be treated are isolated and far apart and the patient very intelligent.

Vernal Catarrh.—This is another nonmalignant condition in the treatment of which unfiltered radium has proved very satisfactory. A small block with unfiltered radium on the surface, as previously illustrated, may be placed over each lid in two areas, so that an efficient radiation is afforded the entire lid. Providing a strong dose of radium is used in this applicator, it need only stay in place a few minutes so that the discomfort to the patient is slight. From the standpoint of

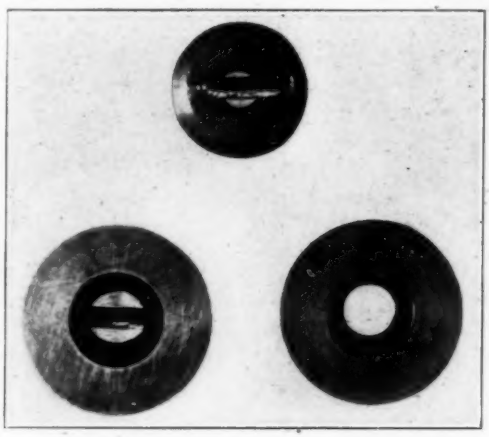

Fig. 11.—Steel cone, with enameled silver tubes, which affords the kind of protection that the type of lesion in Figure 10 requires.

the operator, this method of treatment is preferable because of the slight amount of exposure necessitated. It is not, however, the most efficient and accurate method of applying radium in these cases. The active deposit of radium on lead foil, previously mentioned, is the ideal form in which to apply radium to the under surfaces of the eyelid. Lead foil, 0.1 mm. in thickness, is used on which to collect this active deposit. After the deposit has been collected on the lead foil, the radio-activity may be measured by the same method of ionization as is used in determining the strength of our emanation tubes, and, knowing the total surface area of this piece of lead foil, we may then calculate the strength per square centimeter. The foil is then folded double so that the two surfaces covered by active deposit are in contact. This, of course, doubles the strength per square centimeter. The

folding over is done for the purpose of affording a filtration of 0.1 mm. of lead, that is, the thickness of the lead foil, for protection of the cornea. A piece of this, the size and shape of the lesion to be treated, can then be readily cut with scissors. The eye is cocainized and petrolatum placed beneath the lid; then, with a forceps this small piece of lead foil, the inner surfaces of which are covered by the active deposit of radium, is inserted under the lid in apposition to the diseased area of mucous membrane. We always aim to have the concentration of such a degree that an applicator is required to stay in position only

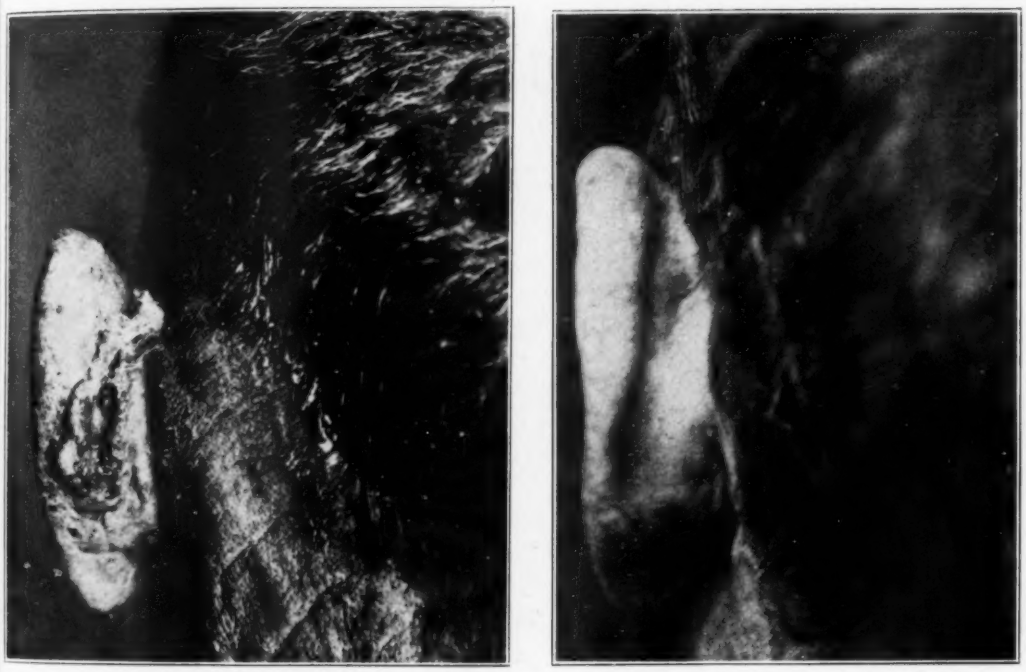

Fig. 12.—Type of lesion suitable for the use of an applicator made of the dental modeling compound, before and after treatment.

a few minutes. This method is entirely painless for the patient, affords a means of accurate approximation of radium to the parts to be treated, and gives the intense local effect to be desired. The only difficulty about the use of radium in this manner is the exposure of the operator. While the active deposit decays rapidly, it is, nevertheless, very intense in its effect for a short period, and since it is entirely unfiltered the operator must be careful to keep as far from it as possible. The use of long forceps and long handled scissors, especially if many patients are to be treated in this manner, is essential to the safety of the operator.

Figure 4 shows the lead foil used, as well as two small pieces folded and cut ready for use. Figure 5 shows the operator in the act of inserting one of these small pieces beneath the patient's eyelid. In many cases one application is sufficient, although in some of the more obstinate cases two, three or even four applications may be necessary.

Nevi.—In the treatment of nevi, or capillary angiomas, the same method of applying active deposit of radium on lead foil is the ideal technic but, except in special cases, it is to be avoided because of the amount of exposure to the operator necessitated in its preparation. Unfiltered radium on wood, as previously described, is very efficient in the treatment of most of these lesions.

Small Lesions.—For the treatment of many small lesions, such as moles, papillomas or rodent ulcers, one or two small tubes of radium

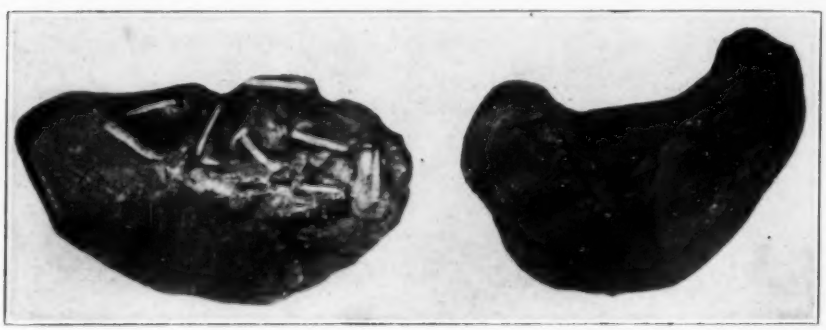

Fig. 13.—Applicator made for the patient in Figure 12. The illustration at the right shows the applicator ready to be sent to the laboratory; the one at the left shows the silver tubes held in place by paraffiin and ready to apply over the lesion.

emanation are required. In Figure 6 these tubes in aluminum, silver and platinum are shown. The selection of the tube and filter depends on the amount of penetration desired. For holding these tubes accurately in place, on such small lesions, we have found the ordinary red dental modeling compound used by dentists in the making of impressions of inestimable value. In Figure 7 the method of using this is illustrated. This modeling wax, when placed in hot water for a few minutes, readily softens so that it is very soft and pliable. A small piece of it is placed over the lesion, and the tubes pressed into place while it is still soft. In a few minutes it hardens in place and adheres to the skin sufficiently to prevent falling off. As a further precaution, in some locations, a small piece of adhesive plaster may be applied over the surface and attached to the skin at either side. It has the advantage of keeping the tubes exactly where they are placed, and

prevents the movement which so often occurs if a small gauze pad is used. It frequently happens in these cases that the movement of a tube 3 or 4 mm. from the original area results in failure to obtain the desired result. Figures 8 and 9 show two patients with cases which we consider suitable for the use of this simple technic. We feel that it is vitally important to simplify the technic in all of these cases as much as possible in order to cut down the amount of exposure to the operator, and thereby safeguard the hands of the various persons called on to handle the radium.

It is sometimes necssary to treat a lesion in a location in which the surrounding parts should be protected from the radiation, for

Fig. 14.—Case suitable for the use of buried radium emanation in combination with a surface application of filtered emanation held in place by the dental modeling compound. The photograph at the right shows the result of this combination of treatment.

instance, a small growth on the scalp. For this purpose Dr. Duane of the Huntington Memorial Hospital, Boston, devised a steel cone, illustrated in Figure 10, and introduced it in our laboratory. This consists of a steel cone with a flat base, having in its top a groove, or several grooves, to hold the filtered tubes of radium. These cones are of various types so that the radium may be placed at various distances; they are made with varying diameters in the central free space. The tubes are readily held in place in the grooves at the top by a drop of paraffin or a small piece of adhesive plaster. The fixed

walls of the steel cone cut out all appreciable radiation extending laterally and permit only treatment of an area covered by the opening in its base. The only disadvantage of such an applicator is its weight.

In Figure 11 is shown a small papilloma of the scalp suitable for such a method of application. The applicator is held in place by the patient, although it may quite as well be strapped there by adhesive tape. At the right the same case after treatment shows that there has been no unnecessary epilation of hair.

Treatment of More Extensive Lesions.—When we treat some of the more extensive and irregular lesions, such as the rodent ulcer illustrated in Figure 12, we must be more careful in our radium distribution. Success or failure will depend almost entirely on the accuracy of the approximation of radium to the involved area. In such cases we make extensive use of the dental modeling compound previously mentioned. After this wax is made plastic by immersion in hot water for a few minutes it is molded over the lesion to be treated

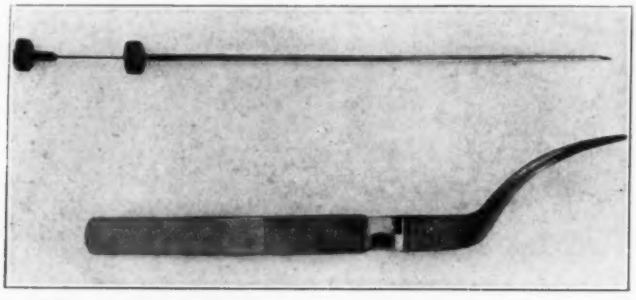

Fig. 15.—Trocar needle used for inserting the fine radium emanation tubes interstitially; below, a special type of forceps found valuable in loading the emanation tubes into the ends of the trocar needles.

and left in place to harden. It is then removed and the area to be treated marked on the applicator in ink. This applicator is then taken to the laboratory and grooves made in it with a small chisel or a heated rod so that the enameled silver tubes may be laid in the grooves at a distance of approximately 3 mm. from the surface. The tubes are so arranged that there is one tube for each square centimeter of surface, and they must also be of equal strength, unless at certain points a slightly stronger dose is indicated, in which case such instructions should be marked on the applicator at the time of sending to the laboratory. When these tubes have been placed in position in the grooves they are sealed in place by pouring hot paraffin over the surface. In addition to holding them in place, this paraffin affords a sufficient filter to remove the small amount of secondary radiation from the silver tubes. I mention silver tubes because we almost

invariably use 0.5 mm. silver as our filter in the treatment of this type of lesion. The applicator is now ready for applying to the growth. It will fit exactly, as the mold has been originally made so that there is no danger of applying the radium at the wrong point. The unevenness of its surface, corresponding to the irregularities of the part, prevents slipping, and it can be readily strapped in place with adhesive tape. Our dosage varies, as I stated before, from 50 to 60 or 65 mc. hrs. per square centimeter of surface, depending on the type of lesion and the amount of cross-firing encountered. Figure 13 shows one of these applicators hardened and marked with ink, ready to have the tubes inserted; the illustration to the left shows it with the tubes inserted and ready for application to the lesion. This particular applicator was made for use on the lesion illustrated before and after treatment in Figure 12.

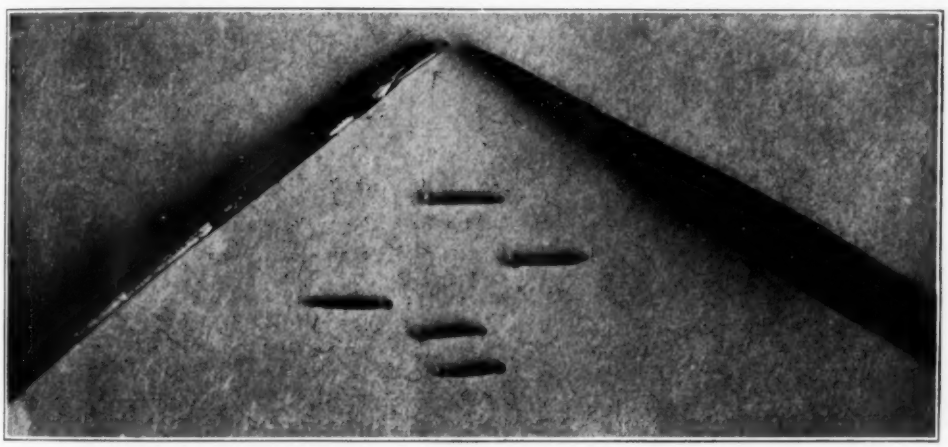

Fig. 16.—Small glass radium emanation tube magnified about five times; also the act of loading one of them into the end of the needle.

We frequently have bulky growths, such as the squamous cell carcinoma illustrated before and after treatment in Figure 14, in which surface applications of radium are inadequate to control the disease. Radium applied on the surface of such a lesion exerts the intensity of its effect on the least important portion of the growth. The superficial part absorbs most of the radiation, even though heavy filtration is employed, leaving the base little affected.

In the treatment of these we have made valuable use of a method which we employ extensively in many of the deeper lesions in other parts of the body, that is, the burying of radium emanation in the substance of the growth. For this purpose we use small glass capillary tubes of radium emanation, similar to those previously described, but

made much smaller in size. They are approximately 3 mm. in length and 0.3 mm. in diameter, and in strength vary from 0.5 to 3 mc. of radium emanation although about 1 mc. seems to be nearer the ideal strength for most purposes.

These tubes are readily sterilized by boiling and are then inserted into the substance of the tumor by means of fine trocar needles. In this manner weak tubes may be distributed uniformly throughout the deeper portions of the growth, thus giving an intense beta and gamma ray effect in the more inaccessible parts of the growth, while a surface

Fig. 17.—A recurrent squamous cell carcinoma of the skin with the skin now intact and the recurrence in the deeper tissues attached to the periosteum over the jaw bone. This case is suited for the combined use of radium emanation and surface application of filtered radium at a distance to afford a very penetrating external dosage without damage to the skin.

application of filtered radium, such as I have previously described, may be used over the entire surface. This method of burying radium emanation has been of inestimable value in reaching portions of the growth which cannot be successfully treated from the surface. It is also a most economical method of using radium since it is placed within the growth so that radiation in all directions is absorbed, and full benefit is derived from both beta and gamma rays.

Figure 14 illustrates a case admirably adapted to this combination of treatment. Figure 15 shows the trocar needle employed in burying the tubes and likewise shows the forceps which we have found to be very useful in placing the tubes in the ends of the needles. Figure 16 is a magnified illustration of the emanation tubes and the act of placing one of these tubes within the end of the trocar needle. This same method may be followed in part by those who have not radium emanation at their disposal but have, instead, the small metal needles with varying quantities of radium salt in their ends. The difference

Fig. 18.—Type of heavily filtered containers, termed "tray" and "pack," used for applying large doses of radium at various distances from the skin surface in order to obtain a maximum of penetration with a minimum of skin absorption. The "danger" label is applied so that there will be no possibility of applying these large doses of radium upside down and thereby causing serious injury to the patient.

is that the metal needle cuts out a very appreciable part of the beta ray activity and, of course, the length of exposure must be very much shorter. We feel that there is considerable advantage in the application of very small amounts of radium in this way, effective over a period of several days or even a few weeks, which makes the method superior to the use of metal needles containing the salt inserted for a few hours and then withdrawn. We have had no trouble from placing a foreign body in this way within the tissues. In the case of an ulcerated lesion

many of these fine tubes slough out as healing progresses, whereas in the solid tumors they become surrounded by a small fibrous capsule and remain harmless.

This method of burying radium emanation tubes is of value in a variety of lesions coming under the care of the dermatologist. Cavernous angiomas respond favorably to their use with a minimum of resultant scar, although several months is required in which to obtain a satisfactory regression. The metastatic cutaneous nodules of melanoma may be dissipated by burying a tube at the base although this in no way precludes the appearance of other nodules. For the individual nodules, however, we have found it to be the method of choice.

Another type of growth, well adapted for the use of these buried emanation tubes, is illustrated in Figure 17. This was a case of recurrent squamous cell carcinoma of the skin with the skin entirely healed but with a deep bulky recurrence adherent to the periosteum over the jaw bone. To supplement the use of the buried tubes with a contact surface application of silver filtered raduim, such as that previously illustrated by the dental modeling compound mold, would be inadvisable because of the danger of skin destruction, providing an adequate dosage was given. In cases such as these we take advantage of a heavier filtration, such as 2 mm. of lead or brass, and place it at a distance of from 1 to 3 or 4 cm. from the skin, in order to get a more diffuse or homogeneous radiation. Figure 18 shows two types of applicator which we have found well suited for this purpose. The circular applicator illustrates what we term a "tray." It is simply a small tray made of 2 mm. of lead or brass and of varied shapes and sizes to meet the special requirements of individual cases. In this may be placed any quantity of tubes available and on top of them a lid made of the same material and thickness as the tray for protection in the opposite direction.

The larger applicator, which we term a "pack," is constructed on the same principle as the tray but is much larger. These range in size from 50 to 70 sq. cm. surface area. The bottom is covered by lead or brass, as before, and the notches illustrated are for the purpose of holding tubes placed inside. These tubes are, of course, of varying strength, and so by a rough mathematical calculation the tubes may be so grouped, over the bottom of the pack, that the radiation will be practically uniform throughout. When the lid has been placed in position a "danger" label is always placed on the top for saftey to indicate to the one who applies it the top and bottom of the pack or tray. In the use of these heavily filtered applicators we are coming to the opinion that, for most purposes at least, 2 mm. of lead is more filtration than is ordinarily required, and that a corresponding thick-

ness of brass will give us the desired result without removing as many of the therapeutic rays. This we feel will result in a considerable saving of the radium.

In conclusion, I wish to state that most of the methods and applicators herein described are due to the work and ingenuity of the late Dr. H. H. Janeway, the former head of the radium department, and to him we owe the credit for advancing the work in this field to its present status.

A CLINICAL, HISTOLOGIC AND BACTERIOLOGIC STUDY OF A CASE OF MULTIPLE BENIGN SARCOID OF BOECK-DARIER-ROUSSY

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A large number of cases of multiple benign sarcoid of Boeck and Darier-Roussy have been studied at length, chiefly as regards the etiology of the condition, and, as yet, no conclusions have been accepted. In the literature there are about sixty reported cases, and these have been well summarized repeatedly. The author is aware of six unreported cases, so it is impossible to know how many have been recognized. The histologic picture is practically unique, and because it so closely resembles that of a noncaseating tuberculous process, the greatest amount of effort has been directed toward isolation of the tubercle bacillus. A bibliography of the pertinent literature is appended to this article. It will suffice to say here that it is generally conceded that the Spiegler-Fendt type, which resembles the neoplastic lymphodermas, does not belong to the sarcoid group, and that it is questionable whether there is a distinct nodular variety of sarcoid of the extremities which is anything other than either an atypical or a true erythema induratum of Bazin, many of these supposed sarcoid cases having gone on to ulceration, a characteristic foreign to unquestionable sarcoid lesions. In many of the latter alone, tuberculosis has been positively demonstrated. This leaves only the Boeck type of multiple benign sarcoid, or miliary lupoid as it is sometimes called, and the subcutaneous sarcoid of Darier-Roussy as representatives of the group. The Boeck and Darier-Roussy types sometimes overlap in both gross and microscopic characteristics.

REPORT OF A CASE

History.—An Italian woman, 25 years of age, was born in America and married at the age of 18 years. She was the mother of three children, all well, and she had had no miscarriages. Except for measles and "worms" as a child and a history of frequent "colds," she had always been vigorous and well. There was no family history of tuberculosis or of any other disease of special interest. She had always worked strenuously, her labor having been confined mostly to her home. There was no noteworthy menstrual or venereal history.

Eight years ago the patient thought she sprained her left little finger, which was painful and treated for a sprain. About one month later the pain stopped, and this finger became more swollen on the flexor surface in the region of the first and second phalanges and on the extensor surface of its distal phalangeal joint. Gradually these swellings had increased in size and

number on all of the fingers and on the back of both hands and wrists. Similar involvement of the feet and ankles made its appearance about one year after the beginning of the activity of the hands, and it, too, has been slowly progressive. The first lesions occurring on the feet were slightly painful and tender for about one week when first noticed. About two years after the beginning of the hand involvement, the lesions on the face and arms appeared simultaneously as soft red macules which gradually became larger by peripheral extension and coalescence, deeper red, more elevated, and more easily palpable. The majority of these formed within a year.

Physical Examination.—The patient was about 5 feet, 2 inches in height, apparently about five years older than the age given, well nourished and slightly pale. (For description of the skin, see addendum.) There were no gross noteworthy changes of the scalp, eyes, ears and nose, except as mentioned elsewhere. The teeth, except for one carious molar and a slight pyorrhea of the lower gum in front, were in good condition. The tongue was grossly normal. The tonsils were small, with clean crypts, and the pillars and soft palate were a normal red. The pharynx was slightly injected, and there was a slight chronic hyperplasia of the posterior wall of the lymphoid tissue. There was no other gross change of the mucous membrane of the oral or nasal cavities. The cervical lymph glands were not palpable. The thyroid gland was not enlarged, and there were no abnormal pulsations of the blood vessels of the neck. The chest was well developed and of normal symmetry. There was no retraction of the fossae of the base of the neck with deep inspiration, and the excursion of both the lower and apical lung borders was everywhere liberal. No noteworthy findings were elicited in the lungs by inspection, palpation, percussion or auscultation. The heart borders were well within normal boundaries, and the heart tones were clear and unchanged. The lower half of the abdomen in front was somewhat pendulous, and its skin was unchanged except for a few striae gravidarum. The subcutaneous fat of the trunk in front was thick, making palpation difficult. The costal angle was an acute angle. The spleen, liver and kidneys were not palpable, and there were no liquid or tumor masses or evidences of hernia in the abdomen. Splenic dulness was within normal limits. Rigidity and areas of tenderness of the abdomen were absent. The inguinal glands were of normal size. The genitalia were not examined at this time. There was no axillary or epitrochlear adenopathy. The finger and toe nails were unchanged. Sensation was generally normal to touch, heat and cold, and there was no alteration of the superficial or deep reflexes.

There was a bluish-red, sharply defined, soft nodular patch of the right cheek, the center of its medial margin 2 cm. from the angle of the mouth. The lesion was approximately round, and its borders sloped gradually to fade into the color and texture of the surrounding grossly normal tissue. The elevation of the lesion was about 2 mm., and its greatest transverse diameter was 3.5 cm. The skin over it was soft and dry, and there were many dilated blood vessels at its periphery which, in most instances, coursed toward the center. Near the center of the lesion, beneath the superficial layers of the epidermis, were soft, cream colored or light brown, pinhead-sized puncta, composed, apparently, of sebaceous material. The redness faded to light brown with pressure. There were three fused patches of the left cheek similar in all essentials to the one just described, the largest being of approximately the same size and locality as the lesion of the right cheek. A less sharply defined plaque of the same color extended across the nose, only the portion near the

tip on the left side being distinctly nodular. There was considerable dry scaling of the patch on the nose. Pinhead to match-head sized, red and pink, soft papules, rather indistinct, thickly mottled the chin and upper lip. Each of the large, dark red, soft nodular areas described was studded with match-head sized, brownish, firmer nodules, most clearly defined by the aid of the diascope. There were about twenty pinhead to match-head sized, soft and firm nodular lesions of the neck behind the ears near the scalp hairline and as many of the forehead. These varied in color from that of the normal skin to pink or light red. There was an area of the skin over the manubrium a little greater in size than the diameter of a silver dollar, composed of three or four fused deep nodular patches, each a little less than the diameter of a small fingernail

Fig. 1.—A lobe from the finger magnified 60 diameters, showing its division into lobules.

and more distinct by palpation than by inspection, the skin here being but slightly elevated and pink to blue-red.

Deep-seated, blue-red to brownish, nodular patches, chiefly of the extensor surfaces, extended down each upper extremity from the upper scapular region. These patches tended to coalesce to form gyrate arrangements on their respective extremity. The patches were decidedly deepseated and nodular, and this could only be elicited accurately by palpation. The flexor surfaces were relatively free, as was the back of the lower half of the left forearm. The patches were all attached to the skin above and were freely movable over the underlying, deeper subcutaneous tissue.

The hands were lumpy and swollen to the extent of considerable deformity. Several deep, circumscribed, slightly movable, flat, soft and firm nodules, bean to almond size, were present on the back of the hands, about the wrists, and on some or all of the surface of all of the fingers. Their overlying skin was tense and of approximately normal color. The dorsum of the distal phalangeal joint of the index, ring and little finger of each hand was broken down at the present time and covered with a bloody crust, a condition which healed in the course of two or three weeks only to recur in the course of two or three months. The distal phalanges were, in nearly every instance, fixed in partial flexion and some of them were distorted to one side or the other.

Fig. 2.—Section from the face magnified 130 diameters, showing what resembles a noncaseating miliary tubercle.

There were five painless, soft, globular swellings in the vicinity of the left ankle, chiefly of the outer side, each of about walnut size, deep-seated, and fairly sharply circumscribed, the skin over them being grossly of normal appearance. Also on this side, midway between the back of the heel and the root of the small toe, its lower margin extending to the plantar surface, was a swelling in all essentials similar except that it was blue-red and more firm. There was a swelling of the back of the right heel in the region of the attachment of the Achilles tendon similar to the first swellings of the left foot, except that it was much harder. The lateral surface of this ankle was rather puffy, but there were no circumscribed or definite infiltrations.

Laboratory Examination.—The following findings are in each instance an average of repeated examination:

Blood: The blood findings were: erythrocytes 4,250,000, leukocytes 11,400. The differential leukocyte count was: polymorphonuclear neutrophils, 54 per cent.; large lymphocytes, 18 per cent.; small lymphocytes, 16 per cent.; large mononuclears, 2 per cent.; transitionals, 2 per cent.; eosinophils, 7 per cent.; myelocytic neutrophils, 2 per cent. The percentage of hemoglobin was 75; the color index 0.89. The blood pressure was: systolic, 128; diastolic, 84. Blood cultures were negative. Blood Chemistry: urea, 180 mg. per liter; chlorids, 5.09 gm. per liter of plasma; plasma bicarbonate, 49.7 c.c.; nonprotein nitrogen, 26.6 gm. per liter; uric acid, 1.8 mg. per 100 c.c. Body temperature ranged from 96.8 F. to 98.4 F. in the course of twenty-four hours.

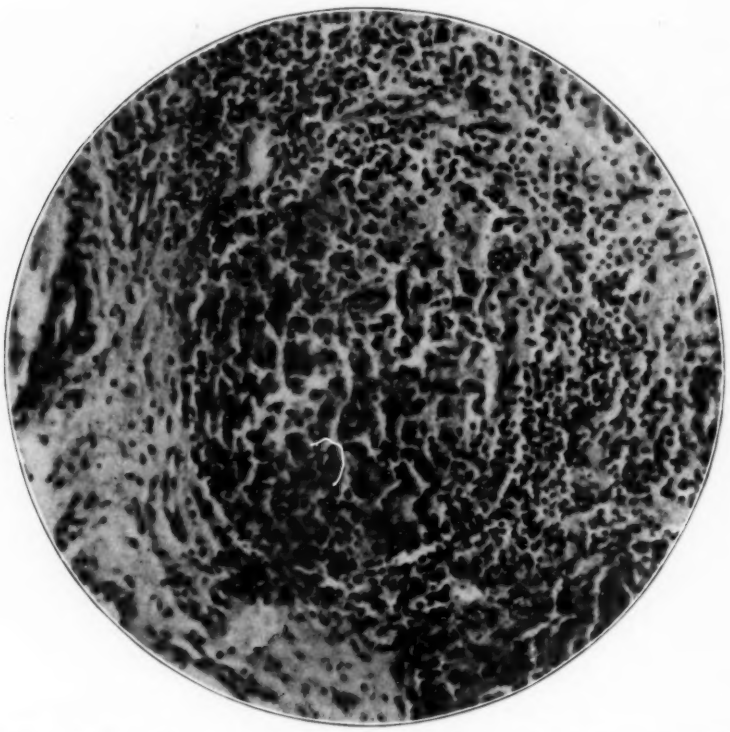

Fig. 3.—Section from the face magnified 130 diameters, showing epithelioid-cell proliferation surrounded by plasma cell connective tissue cell infiltrate.

Urine: The specific gravity was .1017; the reaction, acid; albumin, sugar, acetone, diacetic acid, chemical blood, bile, indican, melanin and Bence-Jones protein were negative. The diazo reaction was negative. Microscopic examination revealed no casts or blood, very few leukocytes, many epithelial cells and a few uric acid crystals. Urine cultures were negative except for contaminating organisms. No tubercule bacilli were found after six hours of centrifugalization.

Sputum and Nasal Secretion: Carefully selected specimens were negative for tubercle bacilli.

Stools: The color and consistence were normal and no tubercle bacilli were isolated. All contained fat (sudan III), starch (Lugol's solution), a few muscle and connective tissue fibers and grossly visible undigested food.

Wassermann Reaction: This was negative to five different antigens.

The von Pirquet test was negative.

Tuberculin Reaction: The patient reacted negatively, locally and generally, to all doses up to and including 7.5 mg. of old tuberculin.

Complement-Fixation Test for Tuberculosis: This was positive. (Done once only and by a commercial laboratory.)

Roentgenology: The entire body was radiographed and the following findings were obtained: The skeleton, aside from the bones of the hands and the feet,

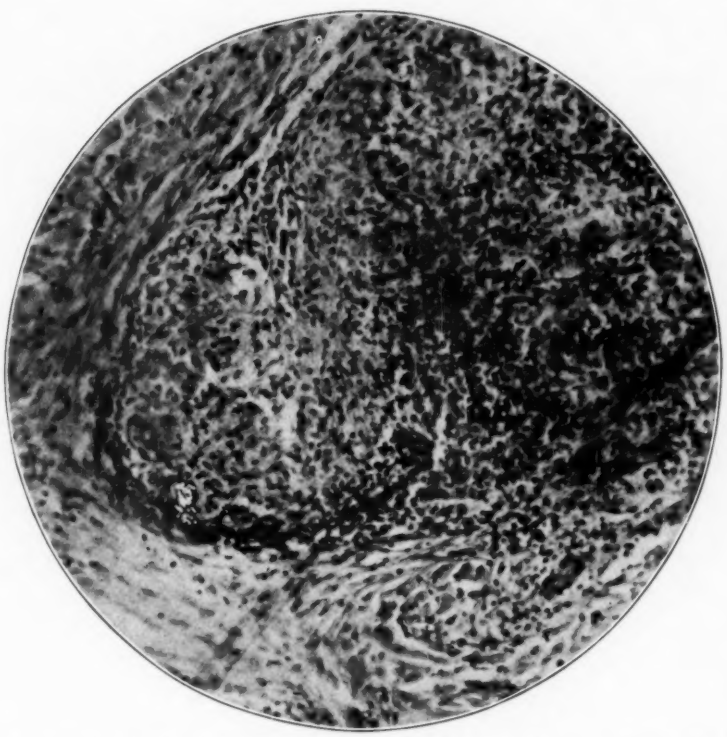

Fig. 4.—A lobule from the finger magnified 110 diameters, showing its epithelioid-cell composition and its dense plasma cell—round cell peripheral infiltrate.

was negative. Roentgen-ray examination of the feet showed circumscribed areas of central destruction in the distal ends of the fifth metatarsal and first phalanx of the first, second and fourth toes of the right foot and of the fifth metatarsal and first phalanx of the first and second toes of the left foot. There was no evidence of erosion from the outside in these bones. The bones of the hands showed areas of both central and cortical destruction. There was central destruction producing millet-seed to pea sized areas of reduced density in the distal ends of the first phalanges of the third, fourth, and fifth fingers and of all of the second row of phalanges, including a large pea-sized

area of reduced density in the shaft of the second phalanx of the index finger of the right hand. There was evidence of erosion of the cortex of the first and second phalanges of the middle finger. The left hand showed central destruction of the distal ends of the second, fourth and fifth metacarpals, of the first phalanx of the third and fourth fingers, of the second phalanges of the second and fifth fingers, and of the proximal end of the terminal phalanx of the fourth finger. There was marked cortical erosion of the shaft of the first phalanx of the fourth finger and of the second phalanx of the fifth finger.

Fig. 5.—Lesions on face.

Apparently the cortical erosion of these bones had resulted from the action of the tumors of the soft parts in contact with the bone. The central erosion was probably caused by tumors that had developed within the bone, as in many instances the cortex bordering on the areas of reduced density was nowhere perforated, as shown by anteroposterior and side views of the digits.

The heart and diaphragm shadows were normal, and there were no noteworthy shadows of the abdomen and pelvis. Moderately heavy hilum densities

were present with several (five in the left and about twelve in the right) small, dense nodules. There was moderately heavy, uniform, linear infiltration extending well toward the periphery throughout both lungs. This linear infiltration probably indicated an ancient chronic infiltrative process, as it was too uniform to denote a tuberculous involvement.

Bacteriology.—A piece of tissue was removed from each cheek, and the encapsulated nodule of the volar surface of the middle phalanx of the left little finger was excised in toto. Tissue was fixed in Zenker's solution and

Fig. 6.—Lesions on face.

alcohol for microscopic study. The bulk of one of the cheek specimens and of the finger nodule was separately macerated in sterile salt solution in the grinder devised by Rosenow and injected into six guinea-pigs, three of each, intraperitoneally and subcutaneously. One pig died in thirty-seven days, after the gradual loss of considerable weight, of what appeared grossly and microscopically to be a nontuberculous bronchopneumonia, marked in both lungs. The other five pigs were killed sixty-two days after inoculation, four of them showing

definite pathologic changes but no evidence of tuberculosis, the fifth pig being perfectly healthy. Numerous tissue stains for tubercle bacilli and a search for the organism by the antiformin method were made of all tissues grossly altered, and in all instances with entirely negative findings.

Aerobic and anaerobic glycerine-agar and blood-agar cultures of tissues removed from the finger and face showed no bacterial growth in thirty-two days.

Histology.—The tissues removed from the face and the finger were blocked in paraffin and stained with hematoxylin eosin, Pappenheim's pyronin methyl green, Unna's polychrome methylene blue, Unna's orcein, Van Gieson's picric acid fuchsin alum hematoxylin, Weigert's resorcin fuchsin ferrisesquichlorid, and Weigert's lithium carmin anilin methyl violet.

Over a hundred sections from the excised tissues were carefully examined for tubercle bacilli by the Ziehl-Neelson-Gabbet carbolfuchsin methylene blue

Fig. 7.—Lesions of the upper extremities and swelling and deformity of hands.

stain with disappointing results, although in several instances suspicion was aroused in the vicinity of giant cells, in each, undoubtedly, by artefacts. No granules were demonstrated with Much's modified Gram stain.

The finger nodule was densely encapsulated and relatively avascular. Coarse lobes of greatly varying sizes were formed by heavy connective tissue bands, and there were lobules within these formed by delicate collagenous bundles and a heavy round cell—plasma cell infiltrate. Within the lobes were chiefly large epithelioid cells and a few lymphocytes and ordinary connective tissue cells. There were no giant cells. The mast cells were occasional and limited to the periphery of the lobules, while the plasma cells were, as mentioned, not only abundant in this location, but also scantily interspersed among the epithelioid

cell proliferation. Elastic tissue was absent within the lobes, being clearly demonstrable only at the periphery and in the blood vessel walls. The overlying epidermis and upper corium of the nodule were not removed.

The sections prepared from the lesions of the face differed markedly from those described in that there was no dense connective tissue proliferation in the growth. The epidermis was apparently affected only secondarily, that is, by the pressure of the growth beneath it. It was decidedly thinned out and its rete pegs were practically obliterated, as were the adjacent papillae of the corium. The blood vessels of the corium were much dilated and increased in number, their walls evidently without noteworthy proliferation. There were grouped masses of fibroblasts in the upper portion of the corium and evidence of uniformly distributed older connective tissue also increased in this locality. The new growth was practically limited to the lower half of the pars reticularis and the hypoderm. It consisted of nests, rather confluent in places, of large

Fig. 8.—Deformity of hands and fingers.

epithelioid cells with pale-staining, large, vesicular nuclei. In the center of from one to three of these clusters of each section was what closely resembled a noncaseating miliary tubercle, the giant cells being chiefly of the Langhans type. Interspersed in these nests were a few plasma and ordinary connective cells, as well as a few small mononuclear leukocytes. These epithelioid clusters were separated from those adjacent by delicate collagenous strands and a heavy plasma cell—round cell infiltrate containing an occasional mast cell. The granuloma itself was relatively avascular, the only vessels present being at the periphery of the lobules where the infiltrate was most marked. Elastic tissue was demonstrable only at the periphery of the lobules and in the blood vessel walls. Clumps of interwoven strands of fibrin were demonstrable here

and there in fair abundance. There was no evidence of necrosis in any part of the sections or of invasion or pressure atrophy of gland, nerve, or blood vessel structures. The lymph spaces were apparently dilated in most parts of all of the sections, but were without proliferation and without recognized relation to the cell infiltrate.

Treatment.—There has been no response to prolonged arsenical medication per os, the patient having taken large doses constantly for a period of two years. Roentgen-rays have been extensively used on the hands and face without permanent improvement. Recurrence has taken place in all of the lesions excised, even the scar being almost completely replaced by the growth. Arsphenamin and tuberculin injections are yet to be employed. The lesion of the manubrium has recently been destroyed, apparently entirely, with radium, only atrophy and pigmentation remaining.

DISCUSSION

The case under consideration is of special interest because: 1. It is associated with bone involvement. 2. It is of mixed type (Boeck and Darier-Roussy). 3. There are no definite concomitant tuberculous findings. 4. There is no response to prolonged therapy of the varieties generally employed in these cases with some or much success.

There can be no doubt that the diagnosis is correct, not only because of its classical histopathology, gross appearance and history, but also because it has been undisputed after observation by numerous well-known dermatologists from all parts of the country, the case having been repeatedly shown before the Chicago Dermatological Society at regular and annual meetings.

The patient has been under the observation of Dr. Oliver S. Ormsby and Dr. James Herbert Mitchell for over two years, and it is to them that the author is indebted for the privilege of studying the case. For the skiagraphy, the author is indebted to the kindness of the Presbyterian Hospital of the City of Chicago and for the interpretation of the plates to Dr. D. B. Phemister of this city.

25 East Washington Street.

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FOUR CASES OF LICHENOID TRICHOPHYTIDE*

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The occurrence of a systemic reaction accompanied by a more or less generalized eruption in severe cases of tinea, especially kerion of the scalp, has been noted with increasing frequency in European literature, but as yet has received only scant attention in this country. Bloch [1] has published several articles on the subject, the last one giving a number of illustrative cases and containing a very illuminating discussion of the phenomena so far observed in this connection and of the theories adduced to account for them. Appended to this article is an extensive bibliography. Rasch [2] also has recently published an analysis of cases of the same kind observed at Copenhagen. These workers, and others also, have noticed that in some cases of severe kerion, either of the scalp or the bearded face, there is a systemic reaction, with fever and more or less prostration, and accompanied by a more or less generalized eruption, occurring usually after the kerion has been in existence for a considerable time.

Cultures have shown that the fungus causing the kerion may be any one of several species, and there seems to be no relationship between the variety of fungus and the character of the secondary eruption. All that is required is that there should be a deep and extensive mycotic inflammation. The commonest form of exanthem is an eruption of small, lichenoid papules, sometimes occurring singly, but usually grouped in patches of varying size. Other types have been noted, however, vesicles, pustules, a scarlatina-form rash, erythema multiforme, and nodes like those of erythema nodosum. It has been noted that in patients suffering from kerion, the injection of trichophytin may produce an eruption exactly like that occurring in the course of the disease. These eruptions all fade as the kerion heals, and if there be any areas of tinea on the skin these also heal without treatment. The entire skin, in severe cases of kerion, seems to have become hypersensitive to the poisons produced by the disease, and as these increase in quantity the organism acquires an immunity by virtue of which it throws off the infection from its original site and also from any secondary foci that may have developed.

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* From the New York Skin and Cancer Hospital.

1. Bloch, Bruno: Ann. de dermat. syph. **2:** (Jan and Feb.) 1921.
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REPORT OF CASES

CASE 1.—*Examination.*—L. C., a girl, aged 6 years, came to the New York Skin and Cancer Hospital, March 18, 1921, suffering from a severe infection with pediculosis capitis. Closer examination revealed a severe and extensive kerion. On March 21, she had a profuse eruption involving the trunk and upper extremities, the primary lesion of which appeared to be a tiny red papule. The brightness of the color suggested scarlatina, but the papules were too large and the distribution too uneven. These papules occurred in part singly, but mostly in groups varying in size from half an inch to several inches in diameter. The groups were very irregular in outline and showed no tendency to form distinct marginate patches or to clear in the center. The conjunctivae were congested, the tongue distinctly reddened and the temperature was 103.2 F.

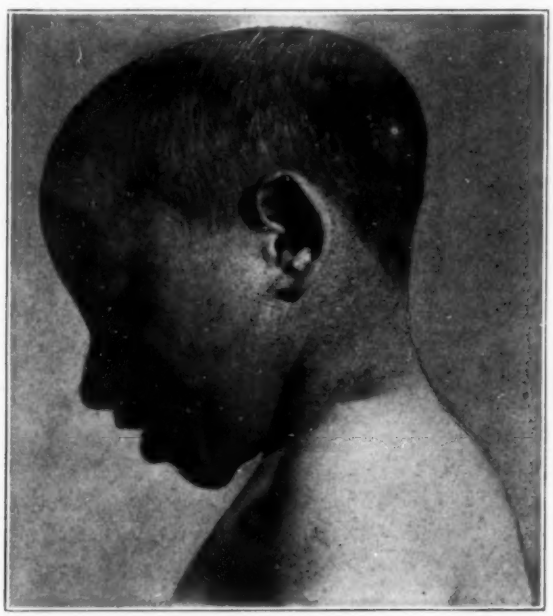

Fig. 1.—Patient in Case 2, showing kerion of occiput and follicular tricophytide of the side of the neck.

Subsequent Course.—She was treated at home by the visiting nurse of the hospital, and on April 4 the pediculosis was cured, and the kerion was subsiding, but the eruption persisted. At that time the scalp had been cleared of vermin, but showed many scattered irregular bald areas, somewhat boggy in the center. The exudation of pus had ceased. Spores and fragments of mycelia were not found in the hairs and scales. On April 11, the eruption on the body had faded somewhat, having changed its color from a bright red to a reddish brown, so that in many places it bore a close resemblance to a grouped follicular syphilid. The temperature had fallen, and the patient was evidently convalescent. Many hairs were examined the same day, but, although they were loose and easily extracted, only one showed any sign of ringworm infection. Some of the scales from the scalp showed spores.

Summary.—To summarize, we have here a case of severe kerion accompanied by fever, prostration, and a diffuse exanthem, going on to spontaneous healing, all symptoms subsiding together.

CASE 2.—*History.*—H. W., a boy, aged 9, born in New Jersey, came under treatment May 17, 1921, for a ringworm which had developed about a month previously on the occiput, 2 inches behind the left ear, and which soon involved the rest of the scalp. Within the last week an erythemato-papulo-squamous eruption had spread over the right side of the face, neck and chest. A week before the whole scalp was badly swollen. The patient had been feverish for from eight to ten days, and very restless, especially on May 9.

Examination.—The original spot on the occiput, about an inch in diameter, was bald and crusted, showing some broken hairs, and a moderate degree of

Fig. 2.—Sister of patient in Case 2, showing typical tinea circinata of shoulders.

exudation. There were other lesions on the scalp about a quarter of an inch in diameter, with crusts from one sixth to one eighth inch in thickness. The "trichophytide" involved the entire face and neck, being most marked just behind and below the left ear, where the skin was red, tumefied, rough, dry, and covered with fine scales. The eruption faded toward the periphery, where there were small follicular papules, often capped with fine scales. In front, the eruption extended down as far as the level of the left nipple. In the midst of this papular rash in the neck were two oval spots about half an inch long, resembling tinea circinata; but no organism was found in the scrapings.

The sister of this patient had a typical tinea circinata on each shoulder. Spores were demonstrated in hairs from the boy, and mycelia in scales from the girl's shoulder.

CASE 3.—*History.*—H. B., a boy, aged 9 years, came under treatment May 18, with a history of tinea of about eight weeks' standing, and kerion of from three to four weeks' standing, but most acute during the early part of May. There had been much swelling of the scalp, especially of the right side, accompanied with exudation of sero pus. For the past three weeks, the child had been restless and feverish at night, and he had a poor appetite.

Examination.—The kerion was about 2 inches in diameter, with a few outlying spots. Spores were demonstrated in the hair. There was no eruption on the body.

Subsequent Course.—On May 18, the kerion was subsiding. Surrounding the neck, most marked on the sides, was an eruption of small soft follicular papules. Those at the border of the area were flesh colored, the others becoming a deeper red and more elevated toward the center of the area involved. There were some urticarial lesions on the forearm. On May 20, urticarial lesions were still visible on the forearm, but the papules on the neck were fading.

CASE 4.—*History.*—R. L., a white boy, aged 10, American born, was first seen March 26, 1921. The duration of the condition was about six weeks, a cat being the source of infection.

Examination.—On the left parietal region was a large kerion, the size of a silver dollar, which was tumefied. The surface showed alopecia and broken hairs. On the back of the neck and occiput were many vesico-pustules about one-eighth inch in diameter. A few of these lesions were also seen on the vertex. The occipital lymph nodes were considerably enlarged and tender. On the external surface of the right thigh, about 3 inches above the knee, was a round crusted lesion the size of a five-cent piece. The skin of the trunk and limbs was otherwise negative. There was no suggestion of keratosis pilaris, of lichenoid lesions, or of seborrheic dermatitis.

Subsequent Course.—On April 5, the condition of the kerion was better. The occipital glands were more swollen and tender; the follicular condition of the scalp was worse, there being now many more vesico-pustules, involving the whole scalp, with a few below the hair line of the forehead and temporal regions, and many on the back of the neck. There were no lichenoid lesions on the face or limbs. The mother stated that the child had been feverish at times. The temperature at 7:30 p. m. was 98.3 F.

On May 2, 1921, the mother stated that the child was quite sick after the last visit. He complained of being chilly, and the skin felt hot and dry. His appearance showed this.

The kerion was very much improved; the nodes not quite so swollen or tender. The whole scalp was covered with vesico-pustules. At the base of the neck, and on the axillary folds, the back and the legs, were a few irregular groups of lichenoid lesions, suggestive of lichen scrofulosus, which the mother claimed had been present a week or ten days. She stated that they were less marked and seemed to be resolving. On May 18, the kerion was much better and the lesions on the body were practically gone.

Comment.—The case shows, in addition to the lesions caused by the direct action of the fungus, two types of eruption—the vesico-pustules on the scalp, forehead and neck, and the lichenoid papules on the rest of the body.

My thanks are due to Dr. Whitehouse and Dr. Throne for the privilege of reporting Cases 2 and 4. This series of cases is presented as a preliminary report in the hope of calling attention to a type of

eruption which is probably more common than we have believed and which has not been recognized because it has not been looked for. Cultures have been made from all the cases, but up to the present time a growth has been obtained only from Case 4. This shows an organism resembling the Trichophyton faviforme, but differing from any recognized variety.

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OPTIMUM CONDITIONS OF FIXATION OF COMPLEMENT IN THE WASSERMANN TEST*

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An investigation of the rate of fixation of complement at different temperatures carried out with protein antigens and specific immune rabbit serums, reported elsewhere,[1] led to the following conclusions:

1. The rate of fixation of complement is approximately the same at icebox (6 to 12 C.), room (18 to 25 C.), and water-bath (37.5 C.) temperatures, the tendency being for somewhat greater fixation at icebox temperature.

2. From 60 to 80 per cent. of complement is "fixed" during the first hour of fixation at either icebox, room, or water-bath temperature, the amount being directly proportional to the number of antibodies in the immune serum, fixation being completed in about four hours at icebox temperature.

The fixation periods at water-bath and room temperatures were not extended in these experiments beyond two hours, in view of the deterioration of complement after prolonged exposure at these temperatures.

The proteins used in these studies were edestin from hempseed and phaseolin from the kidney bean, kindly furnished by Dr. Thomas B. Osborne of the Connecticut Agricultural Experiment Station.

A study of the velocity of fixation of complement at different temperatures in the Wassermann test was next undertaken. A detailed presentation of this work will be given elsewhere. Briefly, this investigation was carried out with six different antigens: (1) a crude alcoholic extract of guinea-pig hearts; (2) a crude alcoholic extract of beef hearts; (3) an alcoholic extract of beef hearts previously freed from ether-soluble lipoids; (4) the same antigen cholesterinized with 0.4 per cent. cholesterol; (5) a Noguchi antigen; and (6) a human heart antigen cholesterinized with 0.4 per cent. cholesterol. The periods of fixation were 0, 5, 15, 30 and 60 minutes, and 2, 3, 4, 5 and 6 hours. The fixation temperatures were, as in the case of the protein antigens, icebox, room and water-bath.

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* From the Bureau of Laboratories, Michigan Department of Health, Lansing, Mich. Presented before the Eighth Annual Meeting of the American Association of Immunologists at Cleveland, Ohio, March 24, 1921.

1. Kahn, R. L.: Proc. Soc. Exper. Biol. & Med. **18**:168, 1921. Complete report to appear shortly in J. Exper. M.

It was found with these antigens, with the exception of the Noguchi antigen, that the velocity of fixation of complement at these temperatures was approximately the same, the tendency being for somewhat greater fixation at icebox temperature. The velocity of fixation with the Noguchi antigen was somewhat greater at water-bath than at icebox temperature. The fixation periods at water-bath and room temperatures were in these experiments, also, not extended beyond two hours.

It was further found that the velocity of fixation of complement was directly proportional to the concentration of the so-called syphilitic antibodies in the syphilitic serums, and that maximum fixation was attained in about four hours at icebox temperature.

The problem that presented itself as a result of the foregoing studies—and which I shall discuss—was to establish whether these experimental findings would be applicable to the routine Wassermann tests carried out in this laboratory, particularly whether icebox fixation could safely be substituted for water-bath fixation in the case of the cholesterinized antigen tests and whether there would be any advantage in it.

EXPERIMENTAL

Until Feb. 9, 1921, we made duplicate Wassermann tests with two antigens and two modes of fixation on all specimens received for examination, employing a period of four hours' fixation in the icebox in the case of the alcoholic antigen tests, and a fixation period of forty-five minutes in the water-bath in the case of the cholesterinized antigen tests. Of about 20,000 Wassermann tests carried out with these two modes of fixation, the tendency has been for weaker reactions with the cholesterinized antigen and water-bath fixation, as compared with the alcoholic-antigen tests. The same specimens which gave a $++++$ reaction with the alcoholic antigen after four hours' fixation in the icebox, frequently gave a $+++$ reaction with the cholesterinized antigen and forty-five minutes' fixation in the water-bath. One which gave a $+++$ reaction with the alcoholic antigen occasionally gave a $++$ or even $+$ reaction with the cholesterinized antigen.

Early in February, a series of duplicate Wassermann tests were carried out with the cholesterinized antigens, employing forty-five minutes' fixation in the water-bath in one case and the same fixation period in the icebox in the other. The results of 100 such tests are recorded in the table. The tendency for slightly stronger fixation at icebox temperature is clearly shown.

Accordingly, on Feb. 9, 1921, we eliminated water-bath fixation with the cholesterinized antigens and substituted a fixation period of one hour in the icebox instead. This period was chosen instead of

forty-five minutes because the anticomplementary tendency of cholesterinized antigen observed with water-bath fixation is reduced to a minimum when icebox fixation is resorted to. It was further felt that one hour's fixation would not be likely to give false positive results with this antigen.

COMPARATIVE STUDY OF SYPHILITIC SERUMS TESTED WITH CHOLESTERINIZED ANTIGEN AT WATER-BATH AND ICEBOX TEMPERATURES

Serum Number	Fixation for 45 Minutes in the		Serum Number	Fixation for 45 Minutes in the	
	Water-bath	Icebox		Water-bath	Icebox
1	±	±	51	−	−
2	−	−	52	−	−
3	−	−	53	−	−
4	−	−	54	−	−
5	−	−	55	±	+
6	±	±	56	−	−
7	−	−	57	−	−
8	−	−	58	−	−
9	−	−	59	−	−
10	−	−	60	±	+
11	−	−	61	−	−
12	++++	++++	62	−	−
13	−	−	63	−	−
14	−	−	64	±	±
15	+++	++++	65	−	−
16	−	−	66	−	−
17	−	−	67	−	−
18	+	−	68	++++	++++
19	−	−	69	−	−
20	−	−	70	−	−
21	−	−	71	−	−
22	−	−	72	−	−
23	−	±	73	−	−
24	−	−	74	−	−
25	+	+	75	+	+
26	−	−	76	−	−
27	±	±	77	−	−
28	−	−	78	−	−
29	−	−	79	−	−
30	−	−	80	−	−
31	+	++	81	−	−
32	−	−	82	−	−
33	++	++	83	−	−
34	±	±	84	++++	++++
35	+++	+++	85	++++	++++
36	−	−	86	−	−
37	−	−	87	−	−
38	±	±	88	−	−
39	−	−	89	−	−
40	−	−	90	−	−
41	+	+	91	−	−
42	−	−	92	−	−
43	++++	++++	93	−	−
44	−	−	94	±	±
45	−	−	95	−	−
46	−	−	96	−	−
47	+++	++++	97	++++	+++
48	−	−	98	−	−
49	−	−	99	−	−
50	−	−	100	−	−

Of 6,000 Wassermann tests performed with the cholesterinized antigen and one hour's fixation in the icebox, the results approximate the alcoholic antigen tests with four hours' fixation more closely than when the cholesterinized tests were carried out with water-bath fixation. A small percentage of specimens show a tendency for slightly stronger fixation with the cholesterinized antigen; then again, an equally small number show a tendency to slightly stronger fixation with the alcoholic antigen.

Regarding our Wassermann procedure, it might be stated that a sheep cell system is employed. The quantities are one tenth of the original Wassermann technic. All reagents entering into the test are measured in 0.1 c.c. quantities, except the patient's serum, which is employed in quantities of 0.01 c.c. and 0.02 c.c. Two units of complement and 2 units of amboceptor are employed and from 8 to 10 antigenic units in the case of the alcoholic extract antigen and from 3 to 4 antigenic units in the case of the cholesterinized antigen. For further details the reader is referred to other papers from this laboratory.[2]

DISCUSSION

The fact that the velocity of fixation of complement in the Wassermann test is about the same at icebox or water-bath temperature, and that fixation of complement is completed in about four hours suggests the possibility that those who employ a one-half or one hour period of fixation in the water-bath do not obtain the maximum amount of fixation. It is true that strongly positive syphilitic serums show marked fixation of complement after from five to fifteen minutes. In the case of weaker positives, however, no more than 50 per cent. of fixation is frequently obtained after one hour as compared with four hours' fixation.

The question of the period of fixation necessary to obtain the maximum sensitiveness of the cholesterinized antigen, without picking up false positives, is a problem in itself. We are inclined to agree with Smith and MacNeal,[3] Ottenberg [4] and others [5] that prolonged periods of fixation with cholesterinized antigen will occasionally pick up a false positive result and, therefore, limit the fixation period with this antigen to one hour. We are not, however, in agreement with those workers as to the temperature of fixation, preferring the icebox to the water-bath.

The main advantage of icebox over water-bath fixation in the case of the cholesterinized antigen lies in the fact that the former procedure renders the antigen less anticomplementary as compared with the latter. The tendency for anticomplementary properties, which is inherent with the cholesterinized antigen, is reduced to a minimum when a one hour icebox fixation period is employed. A probable explanation for this is that a small amount of complement deteriorates during water-bath fixation, while the complement is practically preserved in the icebox.

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3. Smith, J. W., and MacNeal, W. J.: J. Infect. Dis. **21**:232, 1917.
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Our studies indicate further that the velocity of fixation with cholesterinized antigens is somewhat greater than with alcoholic antigens. This undoubtedly explains why our results with the cholesterinized antigens and one hour fixation approximate the results of the alcoholic antigen tests after four hours' fixation.

Kolmer and co-workers,[6] who have made a careful study of the effects of temperature and time on fixation of complement, conclude that "The (fixation) method of choice narrows down to a selection of three or four hours at 8 to 10 degrees C. plus one hour in the water-bath at 38 degrees C. or eighteen hours at 8 to 10 degrees C. The latter is preferred on the basis of somewhat more sensitive reactions, but the differences are not marked."

Judging from our experience with the technic employed in this laboratory, the slight increase in the amount of complement "fixed" after 5, 7 and 9 hours' fixation, as compared with four hours, is largely nonspecific, due, most likely, to the deterioration of complement. We do not doubt that eighteen hours' fixation will result in a more sensitive reaction than four hours. But this increase in sensitiveness, judged from our studies is largely nonspecific, and a fixation period of twenty-four hours would, in our opinion, for the same reason result in a more sensitive reaction than eighteen hours.

CONCLUSIONS

1. The optimum conditions of fixation of complement in the Wassermann test with alcoholic-extract and Noguchi antigens appear to be four hours at ordinary icebox temperature (from 6 to 12 C.).

2. With cholesterinized antigens, a one-hour fixation period at icebox temperature is recommended. Icebox temperature renders the reactions somewhat sharper than water-bath temperature, and a one hour period precludes the possibility of picking up false positive reactions with these antigens.

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AN EXPERIMENTAL VERIFICATION OF THE SIGNIFICANCE OF THE DELAYED NEGATIVE WASSERMANN REACTION

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AND
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Several years ago, Olson [1] and more recently, McConnell [2] have called attention to a phenomenon known as the "delayed negative" Wassermann reaction. In essence, it has to do with the time at which the reaction is read. If read in about thirty minutes, it is positive; but at the end of an hour or two hours, as the case may be, it is negative. They are inclined to the opinion that such a reaction should be regarded as at least a partial one. McConnell has shown that it occurs in about 1 per cent. of his cases, which he has divided into three groups: the first group comprises known syphilitic patients, most of whom had received treatment; the second, those who probably had syphilis, and the third, those presenting no evidence of syphilis. As is to be expected, the greatest percentage of these reactions is to be found in the first group.

In this connection, however, it is worthy of note that Strickler,[3] Munson and Sidlick have observed that arsenic itself may produce a positive Wassermann reaction when administered to patients suffering from diseases other than syphilis. The significance of this fact is of course obvious, as it has been common practice to use the Wassermann reaction itself as a control to treatment, and to regard the partial reactions obtained after treatment as an indication of decreased activity on the part of the disease. Personally, I have never been able to believe that this apparent correlation was very well founded, knowing as little as we do about the actual mechanism of complement fixation. The fact that arsenic administration is often followed by a disappearance of the earlier lesions of syphilis is not sufficient ground for drawing conclusions regarding a connection between the absence of a Wassermann reaction and the latency or disappearance of the disease itself.

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2. McConnell, G.: The "Delayed Negative" Wassermann Reaction, ibid **5**:43, 1919.
3. Strickler, A.: A Positive Wassermann Test in Nonsyphilitic Patients After Intravenous Therapy, J. A. M. A. **75**:1488 (Nov. 27) 1920.

Attempts to increase the delicacy of the Wassermann reaction for diagnostic purposes are worth while, although such attempts have usually introduced the nonspecific factor. The probable freedom of the "delayed negative" phenomenon from that implication would add greatly to its value from the standpoint of increased delicacy. To my knowledge, no observations have been recorded in which the connection is particularly direct. For this reason I desire to record the following observation, which concerns complement fixation as it occurred in a patient suffering from blastomycosis and in animals experimentally infected.

In this case we were able to isolate three distinct varieties of *Oidium* from the various lesions, and we were interested to know whether the patient's serum contained bodies immune to more than one of them. The whole study will be made the subject of a special communication in the future. The antigens were prepared from thoroughly washed suspensions of the organism, which had been grown from 48 to 72 hours on agar slants. After the washing, they were killed with 0.25 per cent. formol. They were not anticomplementary or hemolytic, and their fixing power was fair. A suspension was prepared, of such turbidity as to give a quantity of 0.1 c.c. for the antigenic unit, which was one fourth of the anticomplementary dose. The patient's serum was used in 0.15 and 0.3 c.c. quantities, and was run side by side with the serum of rabbits which had received three injections of the live organisms.

The control rabbit serum and normal human serum came down promptly at the end of fifteen minutes; but at the end of thirty minutes, the reaction of both the immunized rabbit and the patient was ++++. At the end of forty-five minutes, a marked hemolysis developed, which at the end of the hour left the reaction approximately + or doubtful. At the end of twenty-four hours the reaction was unchanged, and it was perfectly obvious that there was indeed a slight inhibition. More precisely, the reaction in this case should be styled a delayed doubtful, but probably the phenomenon is essentially the same.

We wish to call attention to the fact that the rabbits used were inoculated with pure living cultures of one type of the organism, freshly isolated from the patient's lesions. Some of them succumbed to the infection, as was definitely proved at necropsy and by culture, while others, which had received smaller doses, were made very sick. This was shown by a pronounced drop in weight which they failed to regain after a period of two months. Moreover, they were scrawny and gave the impression that they might die at any time. The blood used in the test was drawn after a period of two months from animals that were definitely proved to have blastomycosis. Their serum was

inactivated at 62 C., as Kolmer [4] has shown some time since that this temperature destroys the tendency for nonspecific reaction which occurs at times with these animals.

The fact that in the serum both of the patient and of the immune rabbits we obtained this delayed doubtful or practically negative reaction, when it was definitely known that both were suffering from the blastomycotic infection, seems significant in the interpretation of this type of reaction. It is always a step toward understanding an obscure process to put it alongside of another which is similar to it and which may be more amenable to experiment. It is obvious that, short of a spirochete demonstration, it is not possible to make a positive diagnosis of syphilis with finality in the individual case.

It is of interest also that the patient's serum showed definite agglutination to two of the three types of yeasts with which it was tried, although this occurred in a dilution of 1:1. It was completely negative in dilutions of 1:25. However, the control with normal serums was entirely negative, and the results are in accord with those originally reported by Ricketts [5] in his study of blastomycosis.

It is likewise of importance that control titrations of the positive serums with an antigen prepared from *Endomyces albicans* were negative within the quantitative limitations of the test as employed. The latter yeast strain was isolated by Tanner [6] from an ordinary pyogenic infection of the finger.

The tendency, then, to regard the delayed negative Wassermann reaction as essentially positive is strengthened by the appearance of the same phenomenon in a patient and in animals definitely proved to have been suffering from blastomycosis.

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ONYCHIA DUE TO BACILLUS COLI COMMUNIS

LESTER HOLLANDER, M.D.

PITTSBURGH

Two cases of onychia have come under my observation within the last twelve months in which cultures from the purulent material obtained from the nail bed yielded practically a pure strain of *Bacillus coli communis.*

REPORT OF CASES

CASE 1.—*History.*—Mrs. A. J. H., aged 52, was referred to me on account of a chronic onychitis affecting three nails on the right hand and one nail on the left, of about five months' standing. The patient did not remember definitely any injury to the nails or to the nail fold. The first symptom which attracted her attention was a severe burning sensation in two of the fingers at the nail bed. She did not notice any change in color, nor was there any visible swelling at this time. The burning sensation had increased from time to time until about three weeks after the onset, when the nail fold over the nail bed became red and considerably swollen. On the advice of a physician, the patient applied hot fomentations of boric acid solution, but did not experience any relief. The burning sensation was supplemented by considerable pain and throbbing, especially at night. In the morning she could press out a little pus from the nail fold and obtain some relief. Within another month, another nail bed on the right and one on the left hand became involved.

Examination.—The distal phalanges of all the involved fingers were swollen and red. On pressure over the nail bed a purulent material was obtained. The nail wall was inflamed and the involved nails were thickened, uneven, and considerably loosened from the nail wall.

Culture from the expressed pus yielded *B. coli communis.*

Treatment.—The nail bed was incised along the margin of the nail wall, and compresses of the following solution were applied continuously for one week, and only at night for another week, with complete recovery.

		Gm. or c.c.
℞	Hydrargyri Oxidi Flavi	0.065
	Potassii iodidi	0.260
	Aquae purae q. s. ad.	100.000

CASE 2.—*History.*—Mrs. I. S., aged 40, was referred to me on account of a similar complaint. Both thumbs and all the fingers were involved in a chronic onychitis. The distal phalanges were markedly swollen, and the nails were rough, uneven, very brittle, and of a dark brownish, dirty color. The trouble was of a year's standing and very annoying, not only from a cosmetic standpoint, but also because it interfered with the patient's housework, because of the extreme sensitiveness experienced, following the use of her hands. She could not remember any injury from manicuring, or other type of trauma to her fingers. The patient was very emphatic in the statement that she began

to experience a burning sensation in all her finger tips at about the same time and that the visible changes in the nail folds appeared almost simultaneously within a few days after the annoying sensation developed.

Examination.—After incising the nail beds, the pus was separately cultivated and the offending organism in all the cultures proved to be *B. coli communis.*

Treatment.—This patient complained of frequent headaches, marked constipation, and of a constant languid feeling.

The treatment used in Case 1 failed to effect a permanent cure. So, after several surgical drainings, an autogenous vaccine was made and administered.

This produced a marked change not only in the onychitis, but also in the general condition, including the constipation.

COMMENT

These two cases permit the assumption of two different routes of conveyance of the infecting organism. The first case, presenting no general symptomatology and a rapid relief after surgical interference, may have been a contact infection, while the second case, an autogenous one, through the hemotogenous route.

7133 Jenkins Arcade Building.

A NOTE ON THE TREATMENT OF LARVA MIGRANS

LLOYD W. KETRON, M.D.
BALTIMORE

Since the parasite causing creeping eruption lies in the skin some distance from the end of the visible burrow, its demonstration is difficult, either for the study of the insect itself or for its destruction. The usual methods that have been resorted to in destroying the larva have been the injection of various cauterizing agents, or excision, both of which have frequently been unsuccessful.

Crocker failed to cure his patient after injection of iodin and phenol and had to resort to excision.

Hutchins was able to destroy the larva by cocainizing the region about the end of the burrow and injecting chloroform.

Hartzell succeeded by applying chloroform over the end of the advancing burrow ten minutes at a time, several times daily.

Stelwagon treated four patients and cured them all by applying cataphoretically a solution of mercuric chlorid (2 grains to an ounce) around the edge of the burrow and touching the suspected site of the insect with nitric acid.

The method which I shall describe, however, seems to offer decided advantages over the usual ones both in effectiveness and simplicity. Although I have not made an extensive survey of the literature, I have found no mention of it in a number of modern textbooks on dermatology. If it should have been published before, the fact that it is not generally known will justify the repetition.

REPORT OF A CASE

History.—The patient was a young man, 28 years of age, who spent two weeks in August of 1920 at Stone Harbour, N. J. During this time, while fishing, he waded around in the sand and mud, often in his bare feet. He soon felt some soreness of the bottom of the foot which was later affected, and he thought that he had a stone bruise. He returned to Tolchester, Md., and while bathing there was bothered with considerable itching of this foot; he noticed that it was very red.

Treatment and Course.—I first saw him about one week after this, made the diagnosis of larva migrans, and advised his physician to use some of the usual methods of treatment. These, however, were unsuccessful, and the patient came to me a few weeks later and was under my care for about two months. During this time it was definitely established that there were two larvae. One was operating in the instep region of the sole of the foot and the other further forward near the base of the toes. Attempts were made to

destroy the insect by application of pure phenol, but this was unsuccessful. Later alcohol was injected, but this procedure also did not meet with success. I was also unable to find the parasite by opening the active end of the burrow with a fine scalpel.

Finally, an area the size of a twenty-five cent piece around the end of the burrow was frozen solid with ethyl chlorid. The patient returned in about two weeks and reported that the treatment apparently had been successful. The other larva was handled in the same manner also with apparent cure. A late communication from the patient about three months after the treatment, stated that he had had no further trouble with the condition. The freezing of the tissues caused practically no local reaction or discomfort.

SUMMARY AND COMMENT

A case of larva migrans is reported in which two insects were present in the sole of one foot. Both insects were destroyed by once freezing a 25-cent-sized area around the advancing end of the burrow.

If this treatment should prove a success in other cases, it offers advantages of simplicity and rapid effectiveness over the usual methods.

Obituary

SARAH ELIZABETH FINCH, 1881-1921

Dr. Sarah Elizabeth Finch, of Sound Beach, Connecticut, died in the Lenox Hill Hospital, New York City, on June 21, 1921, in her fortieth year. She graduated from Syracuse University in 1900, and from Cornell University Medical College four years later.

At the time of her death, and for many years previously, she was connected with the New York Skin and Cancer Hospital. She was greatly interested in skin diseases in young children, and she had charge of the outpatient work for babies at the hospital. She was making genuine progress in distinguishing between fact and fancy in the problem of feeding cases of infantile eczema. She was assistant pathologist to the hospital. She was particularly interested in bacteriology and mycology of the skin, and in her work she had struck leads which gave great promise of ending in the solution of some of the problems of the etiology of certain obscure dermatoses. There were few workers in America so familiar with the trichophytons and allied organisms. She has done much careful work on mycosis fungoides and on Hodgkin's disease. It is to be hoped that some of her researches have been left in such shape that they will not be lost.

She was conscientious, careful and essentially scientific, and was unwilling to express opinions until she felt sure of her ground. She was one of those faithful workers who do so much and get so little credit. Dermatology has lost in Dr. Finch's death a thorough and useful disciple, and her co-workers an associate who will be greatly missed.

X.

Correspondence

"OBSERVATIONS ON MEDICAL PHOTOGRAPHY"

To the Editor:—After having read with great interest the "Observations on Medical Photography" by Dr. Fox in the July issue of the ARCHIVES, I am sure that he will pardon me if I offer a suggestion to the "youngsters" of the profession who are unable to buy and to operate an expensive camera.

I have found that excellent photographs, giving good detail even in such small lesions as verruca of the face, can be made by the use of the ordinary 3 A Eastman folding kodak with a rapid rectilinear lens, using in addition a suitable portrait attachment.

With correct distance, according to the chart enclosed with the portrait attachment and the proper exposure, photographs can be made which add greatly to the value of the case record, giving in addition a guide to the progress of the disease.

The picture made by the kodak is of a convenient size, 3¼ by 5½ inches, from which enlargements to any ordinary size can be made. In addition to the low cost (about seventeen cents per picture including cost of film, developing and printing) the developed film can be filed for reference in a much smaller place than a plate and of course is not liable to be broken.

Although all photographs that I have taken have been made by short time exposure in a well lighted office, I see no reason why with a little care equally good results could not be obtained by flashlight.

JAMES W. ANDERSON, M.D., Norfolk, Va.

Abstracts from Current Literature

MULTIPLE MALIGNANT NEOPLASMS. L. J. Owen, J. A. M. A. **76:** 1329 (May 14) 1921.

Owen considers only multiple malignant growths arising from primary foci, carefully excluding all cases in which the possibility of metastatic lesions or recurrences was present. In all cases possible a study of the pathology of the tissues was made, and of the cases in which this was not possible only those in which a definite clinical diagnosis could be made were included. The literature of multiple malignant neoplasms is small, if cancer of coal tar workers and xeroderma pigmentosa are excluded. These two diseases were not considered in this study.

Three thousand cases of malignancy were reviewed, and 143 cases, or 4.7 per cent., of multiple growths were collected.

Multiple basal cell cancers were observed in eighty-six cases. The lesions were found nearly always on exposed surfaces, and in every instance there was at least one carcinoma on the upper part of the face or scalp. Twenty-five per cent. of the patients in this group were farmers. Exposure is apparently a potent factor in the development of this disease.

The coincidence of basal cell and prickle cell cancers was observed twenty times. The distribution of the basal cell tumors in this group was comparable to that of the preceding group, while the more malignant tumors arose from the mucous membrane of the mouth in seven instances, six times from the face other than the lip, three times from the mucocutaneous border of the lower lip and in four cases from the hands.

Multiple malignant squamous cell carcinomas were observed seven times. There were five cancers of the mucous membrane seen in three patients in this group, the remaining growths being prickle cell in type.

Fourteen patients presented bilateral cancers of the breasts. Simultaneous development of malignancy in each breast occurred four times. In the other cases of this group the first lesion to appear was followed at various intervals by involvement of the other breast.

The coincidence of cancer of the breast and other types of cancer was noted in five patients. Two patients had cancer of the breast and cervix, while the association of mammary malignancy and basal cell growths situated on the face or scalp was noted three times.

Four patients had multiple cystic carcinomas (epithelioma adenoides cysticum). The areas involved were the face, scalp, neck, chest, arms and vulva.

Four patients presented malignant melanotic tumors, either multiple or associated with basal cell cancers.

One patient was found at operation to have four carcinomas of the stomach. Neither metastasis nor implantation from a single primary focus would explain all the malignant growths present.

In two patients more than two types of malignant neoplasms were observed. In one a basal cell epithelioma of the forehead, a sarcoma of the antrum, and bilateral adenocarcinomas of the breasts were noted. The other patient had malignant masses in each breast, in the mouth and on the cervix.

The author believes that many cases recorded as metastases or residual growth from neoplasms previously treated are not such, but are new foci of growth. A patient who has apparently been successfully treated for malignant

disease is not immune to further neoplastic lesions. In fact, the first growth may have indicated a susceptibility to malignant development, and for that reason patients who are under observation following the treatment of malignancies should be carefully observed for the appearance of new tumors, and should have all sources of local irritation removed, if that is possible.

MICHAEL, Houston, Texas.

THE ROENTGEN-RAY SHADOWS OF LUNG SYPHILIS AND SYPHILITIC TUBERCULOUS SYMBIOSIS IN THE LUNGS. W. WARNER WATKINS, Am. J. Roentgenol. **7**:259, 1921.

In terms of clinical pathology, one can distinguish three types of radiographic shadow produced by syphilitic invasion of the lungs: 1. The lesions of active or early syphilis produce shadows which are to be interpreted as (*a*) gummas, or (*b*) inflammatory consolidation or infiltration. Such shadows vary according to the virulence of the infection and the rapidity of the invasion. 2. The lesions of old, latent, or hereditary syphilis produce shadows which represent (*a*) interstitial peribronchial or peri-arterial fibrosis, or (*b*) dense fibrosis of the lung or pleura. 3. In conjunction with thoracic syphilis, indefinite lung densities occur, the nature of which has not yet been determined, either by clinical observation, pathologic research or radiographic characteristics.

Of patients radiographed for suspected lung or heart disease, 2.6 per cent., or 172 of 6,500 patients examined, had pulmonary shadows which could be reasonably considered as showing uncomplicated syphilis, although in many these shadows were associated with cardiac or aortic syphilis.

Of the 6,500 patients previously mentioned, 948 showed lesions of tuberculosis which had reached the advanced degree, according to the classification of the National Tuberculosis Association. In 209, or over 22 per cent. of the 948, a diagnosis of combined syphilis and tuberculosis was made.

Tuberculosis and syphilis may occur simultaneously in the same lung, each producing its own lesions, which can frequently be distinguished by the radiograph. The two diseases may also occur as a true symbiosis. The term symbiosis carries with it a tacit denial of the supposed antagonism between the organisms of tuberculosis and syphilis, for which there is no biologic or clinical evidence.

The importance of this symbiosis from a therapeutic standpoint is:

1. In the treatment of systemic syphilis, it is important to know whether the lungs are involved, since a Herxheimer reaction in the lungs may be serious.

2. It is doubly important in tuberculosis to ascertain whether the patient combats this comparatively benign single infection, or whether a sinister combination with active syphilis must be treated.

3. It may be triply important not to disturb the fibrotic changes of latent syphilis by arsenical treatment, if the tendency of this fibrosis is to arrest the tuberculosis.

GOODMAN, New York.

ON THE COLLOIDAL BENZOIN REACTION--GUILLAIN'S METHOD—IN THE SPINAL FLUID. ROQUE LOPEZ, Prensa Med. Argentina **7**:286 (April) 1921.

Lopez describes a reaction introduced by Guillain, Laroche and Lechelle in France, which they think more accurate than Lange's gold test or the

Sachs-Georgi reaction. The technic is as follows: Six test tubes are placed in a rack and numbered from one to five, leaving the sixth as a control. In the first tube 0.25 c.c. of a 0.1 per cent. solution of sodium chlorid is placed; in the second, 0.5 c.c. of the same solution are placed; in the third, 1.5 c.c.; and in the fourth, fifth and sixth, 1 c.c. To the first three tubes, 0.75 c.c., 0.5 c.c. and 0.5 c.c. of spinal fluid, respectively, are added, the contents well mixed and then 1 c.c. of the mixture of tube number three is added to tube number four and 1 c.c. of the latter to tube number five. Tube number six contains no spinal fluid, being the control. One c.c. of the benzoin colloidal suspension is then added to each of the six tubes, and the whole is left at room temperature until the next day when the test is read. The benzoin suspension is prepared in the following manner: one grain of benzoin is dissolved in 10 c.c. of pure alcohol; forty-eight hours later the supernatant fluid is decanted and three tenths of 1 c.c. are mixed with 20 c.c. of distilled water at 35 C.

All the glassware must be perfectly clean, the same precautions being taken as for the preparation of the colloidal gold fluid of Lange. On reading the test, if the fluid remains homogeneously cloudy, it is negative, but if the benzoin is precipitated and the supernatant fluid appears clear, then the test is positive. The author has used this test in twelve cases with very satisfactory results.

PARDO-CASTELLO, Havana.

URTICARIA SYMMETRICA (DYSMENORRHOICA, MATZENAUER-POLLAND). C. KREIBICH, Dermat. Wchnschr. **71**:1043 (Dec.) 1920.

A girl, 24 years of age, had had attacks of red spots on the face since she was 9 or 10 years old and two attacks involving the whole body during the past year. These attacks were occasionally associated with tetany-like cramps in the hands. Menstruation began at the age of 22 and had occurred only five times in two years. Two types of skin changes were present: acute and chronic. The acute lesions consisted of hyperemic spots which persisted from six to twenty-four hours, leaving behind them a light cyanosis. They varied greatly day by day in size and shape, but were mostly symmetrically distributed over face, neck, arms and legs. Subjective symptoms consisted of burning; no itching was present.

The chronic changes consisted of areas of thickened skin, of a pigmented, dirty-grayish color which had a warty appearance in certain areas. In the axillae there was a papillary hypertrophy resembling acanthosis nigricans.

These thickenings seemed to be due to a piling up of the horny layer and could be partly removed with the fingernail. They were completely exfoliated when one of the acute erythematous patches formed under them. There was no weeping or crust formation associated with any of the lesions.

The acute lesions gave negative histologic findings; the chronic ones, a thickening of the horny layer with fingerlike projections of the papillae, a proliferation of the endothelial cells and a large number of mast cells in the cutis. No cells of acute inflammatory type were present.

Other findings in the patient were: hypoplasia of the inner and outer genital organs, beginning double cataract like that found in endocrine disturbances, medium enlargement of the sella turcica and poorly developed secondary sexual characteristics.

The disease corresponds to the hyperemias which the author has described (Die angioneurotische Entzündung, M. Perles) although the failure of the acute

hyperemic lesions to form hives and become necrotic is new. Another new variation is the secondary formation of papillary hyperplasia and hyperkeratosis due to repeated hyperemia.

KETRON, Baltimore.

THE CELLS OF LANGERHANS: THEIR RÕLE IN THE DERMO-EPIDERMIC EXCHANGES. P. MASSON (PAUTRIER), Bull. soc. franç. de dermat. et syph. **4**: R. S. 7, 1921.

To determine the physiologic function of these peculiar cells, which he considers to be of epidermic origin, the author has examined biopsy material from several cases, and he reports his findings in detail. In palpebral xanthelasma, in which the entire derma showed a cellular content high in lipoids and neutral fats, in the epidermis the cells of Langerhans also contained neutral fats and lipoids but practically no pigment. In a case of xanthoma the excess fat content was limited to the middle and lower derma, the papillae being nearly free; here the cells of Langerhans were found to contain no fat, although their pigment content was somewhat below par. In sections of radiodermatitis the content of certain epidermic cells and of certain cells of Langerhans corresponded to that of the subjacent connective tissue cells.

From these findings the author concludes:

1. The cells of Langerhans contain abnormal substances of the same order as those found in the cells of the papillae (e. g., fats or iron pigment). They contain little pigment when the dermic cells are loaded with fat; they contain little or no fat if the xanthomatous process does not extend up to the basal layer. Therefore they derive their normal content from the superficial dermic cells. Is this not the case in their normal metabolism?

2. The cells of Langerhans apparently contribute in turn to the content of the other epidermic cells, as is seen in the exchange of iron pigment.

3. They are therefore probably amboceptors between derma and epidermis.

4. Substances may be passed on directly from cell to cell through the derma and via the cells of Langerhans, to the epidermis. This may work both ways. in catabolism and in anabolism.

PARKHURST, New York.

PELLAGRA. W. J. MACNEAL, Am. J. M. Sc. **161**:469 (April) 1921.

This is a lengthy article dealing with the entire subject of pellagra, reviewing the work done and theories on the disease in recent years, especially with regard to the findings of the Thompson Pellagra Commission.

While the specific cause of pellagra is unknown, the writer believes the disease to depend on two factors—one of which is a living organism derived from a previous case of the disease, the other a factor or group of factors which reduce the resistance of the individual, among which he mentions malnutrition, cachexia of disease, overwork, climatic conditions, excessive childbearing, old age, alcoholism, etc.

Pellagra exists when there has been a previous case of the disease, and the danger of contracting the disease increases with the proximity to the house of the pellagrin.

Some races appear to be more subject to pellagra than others but probably only in proportion to their racial resistance to disease, while it is most frequent in white women and children, older white men and negro women.

Certain dietary deficiencies are recognized as having a bearing on the production of the disease, but this is not confined to maize. Milk products and

fresh meat are the best foods for the prevention of pellagra. Poor sanitation is a factor in the spread of the disease, which up to the present has not been produced experimentally.

The article concludes with an excellent description of the symptomatology and pathology. Treatment is along the usual recognized lines.

JAMIESON, Detroit.

THE FILIFORM SPRAY IN DERMATOLOGY. VEYRIERES and FERREYROLLES, Ann. de dermat. et syph. **4**:156, 1921.

The authors have had pioneer experience in this field, and have found the treatment very beneficial in a number of conditions. Pruritus and lichenification, they say, readily succumb to it; pruritus vulvae, neurodermite, lichen planus and prurigo are mentioned as yielding favorably. Certain acnes, and especially rosacea, have been benefited, and telangiectases also, when the skin is sufficiently viable to resist the attendant trauma. It may be tried in cases of keloid and of scleroderma. In selected cases of lupus erythematosus and of lupus vulgaris it may be used as a curet, destroying the pathologic tissue and sparing the normal; the resulting scar is good.

The water, heated to the desired temperature, enters an airtight copper tank through a valved inlet. By means of a small electric pump a constant pressure of from 3 to 7 kg., as desired, is maintained within the tank; a relief valve is provided and also a gage to show the level of the water. There is also a thermometer and a pressure gage. Two exits are provided: a drain-cock and a pipe through which the water flows to the spray. At the end of a flexible rubber tube is a hard stone nozzle, pierced by a hole 0.5 mm. in diameter; through this opening the water flows, the nozzle being held at 20 to 25 cm. from the surface treated. The surface should be struck at right angles, the length of the application varying with the nature of the lesion. The optimum temperature is said to be about 33 C.

PARKHURST, New York.

SKIN DISEASES IN RELATION TO INTERNAL DISORDERS. JAMES GALLOWAY, Lancet **200**:364 (Feb. 19) 1921.

The author treats briefly of disorders whose causes are thought to be entirely external and local and on which health and disease exert influences by raising or depressing the powers of resistance and healing. Attention is then called to cutaneous manifestations, in many cases even more striking, but which must be regarded as phases or results of a general infective process or of some internal disorder. In discussing the action of alien protein, the author states that two facts stand out clearly for our recognition from the clinical point of view: 1. As the result of absorption of proteins alien to the invaded organism, eruptions make their appearance closely similar to the erythema group of skin diseases. 2. These eruptions vary in degree, severity and time of incidence, and these variations depend on stages of increased or diminished sensibility which may be acquired by artificial methods. Recognizing these salient points, we may see how large is the field of medical investigation which they indicate; moreover, they may serve to point out the path through a field of clinical medicine which is as yet little known.

WAUGH, Chicago.

A CASE OF HYPODERMIC SARCOID OF THE LEG. L. LAPLANE, Bull. Soc. franç. de dermat. et syph. **3**:75, 1921.

A woman of 51 years presented, just below the popliteal region, a flat plaque 16 cm. long and 2 cm. in depth, of a slightly purplish tint, quite firm and slightly tender on deep pressure. It had been present for seven years, but had grown considerably during the last year. On examination another nodule, the size of a small nut and violaceous, was found nearby. Tender lymph nodes were felt at the saphenous opening of that extremity; there was no genital or anal lesion to account for their presence. No popliteal adenopathy was found. Several typical patches of psoriasis, also said to be of seven years' duration, were present on the arms and legs; a mixed tumor of the parotid gland, diagnosed histologically, was found and excised. Other possibilities having been excluded, it was concluded that the tumor on the leg must be sarcoid. A biopsy was made and the sections were examined by Darier, who pronounced it a typical sarcoid of the Darier-Roussy type. A careful search revealed no tubercle bacilli. There was a definite history of tuberculosis in the immediate family, and the patient herself, with a strongly positive tuberculin reaction, gave a history of recent cough and night sweats; examination showed both apexes to be the seat of an apparently quiescent tuberculous process. The Wassermann reaction was strongly positive, though the history was not suggestive of syphilis.

For two months small doses of tuberculin were administered hypodermatically; then neo-arsphenamin was given and the tumor soon disappeared. As Darier says, this condition may be of tuberculous, syphilitic, lymphogranulomatous or other origin.

PARKHURST, New York.

WASSERMANN TEST WITH SECRETIONS, TRANSUDATES AND EXUDATES IN SYPHILIS, WITH A NOTE ON THE ORIGIN OF THE COMPLEMENT-FIXING ANTIBODY. J. V. KLAUDER and J. A. KOLMER, J. A. M. A. **76**:1635 (June 11) 1921.

The Wassermann reaction was positive three times in nineteen specimens of human milk; weakly positive in one instance among twenty specimens of saliva; moderately positive one time in thirty tests of seminal fluid; and doubtfully positive in ten specimens of aqueous fluid from the anterior chamber of the eye. Eleven specimens of exudates and transudates were examined with uniformly positive results.

The complement-fixing antibody in spinal fluid is regarded as being of dual origin, neural as well as hematogenous, while the Wassermann body in transudates and exudates is derived from the blood plasma.

The surface fluid from a number of chancres yielded almost uniformly ++++ reactions. Saline extracts from syphilitic testicular nodules in rabbits gave positive results. The authors suggest that this "local" Wassermann test may have a practical value in differentiating syphilitic from nonsyphilitic lesions, particularly when applied to chancre fluid as a means to the early diagnosis of syphilis.

MICHAEL, Houston, Texas.

PREROSEOLAR SYPHILITIC ICTERUS AND THE CLINICAL MANIFESTATIONS OF SYPHILIS PRECEDING THE ROSEOLA. L. CHATELLIER and V. BONNETERRE, Ann. de dermat. et syph. **4**:165, 1921.

In a review of the literature the authors have found five cases of this early jaundice and they describe them, adding their own as the sixth. In their

own case and in one other, the icterus had appeared almost simultaneously with the chancre. Except in one case, of hematogenous jaundice, there were the classical symptoms of hepatic biliary obstruction, with the large tender liver, the pigmented urine and the clay-colored feces. The spleen was usually palpable. Itching was always absent. The temperature never exceeded 38 C. These symptoms disappeared, together with the chancre, under antisyphilitic treatment; in the authors' case there was also a coexisting albuminuria, which was quickly dispelled by the treatment.

As further evidences of the early generalization of syphilis, many other manifestations are cited, including periostitis, arthritis, phlebitis, carotid thrombosis (one case), splenomegaly, nephritis and a preroseolar exanthem. The early advent of spirochetemia is mentioned and also the precocious meningeal and cranial nerve involvements. Therefor it is certainly evident that early syphilis does not reside in the chancre alone.

PARKHURST, New York.

FURTHER CONTRIBUTION TO THE STUDY OF ETIOLOGY OF EXFOLIATIVE DERMATITIS. KAREL HUBSCHMANN, Ceska dermat. **2**:153 and 183, 1921.

The author reports two cases of secondary exfoliative dermatitis that showed evidence of hypothyroidism which probably was the main cause of skin disturbances. The first patient showed originally a vesiculo-urticarial affection, the second, an eczema. Under too vigorous a treatment the underlying vasoplegia, in all probability, became aggravated and led to the production of universal exfoliative dermatitis. As thyroidin helps to sustain the tonus of the skin capillaries, the patients were put on thyroid therapy. Both improved remarkably. The third patient presented a typical clinical picture of exfoliative dermatitis with the unusual history of short duration and an intense itching and burning, worse at night. A trichophytic basis being suspected, the patient was put on tar treatment (Rp. Picis lithanthracis, 5 gm.; benzoli, 10 gm.; acetoni, 35 gm.). He left the hospital completely cured in five weeks.

SPINKA, St. Louis.

STUDIES AND CONSIDERATIONS REGARDING THE BERLIN MICROSPORON EPIDEMIC. W. FISCHER, Acta dermat.-ven. **1**:35, 1921.

Epidemiology, clinical aspects, parasitology and treatment are extensively considered by the author. This peculiar microsporon, which grows in abortive forms on ordinary mediums, first appeared in Germany in 1918; it attacked the children of Berlin and Hanover, spreading widely in the institutions. The patients were between 2 and 14 years of age and the ratio of boys to girls was 3:2. Both scalp and glabrous skin were attacked, a temporary depigmentation sometimes ensuing in the healed spots. The lesions were usually multiple and multiform; patients with deeper lesions always reacted positively to an extract of mouse favus introduced intracutaneously, while a weakly positive reaction was given by 15 to 20 per cent. of those with superficial lesions.

The question of therapy is discussed at great length. Owing to technical difficulties, the roentgen-ray treatment proved a failure in many cases and was abandoned, arduous courses with strong irritants being substituted; from 5 to 20 per cent. of pyrogallol was the application of choice, and twenty weeks of this treatment were often necessary to bring about a cure. It was sometimes reinforced by roentgen-ray exposures. The importance of keeping the patients in institutions during treatment is emphasized.

PARKHURST, New York.

REGARDING DIFFERENT ASPECTS OF HEREDITY IN CASES OF UNSUSPECTED ANCESTRAL SYPHILIS. J. AUDRAIN, Bull. Soc. franç. de dermat. et syph. **3**:85, 1921.

The author has observed thirty families, his records often reaching into the third and sometimes into the fourth generation. These findings are presented in detail, including not only the generally accepted stigmas of syphilis but also signs of various glandular (endocrine) alterations, which the author considers probably to be of the same origin.

As characteristics of syphilis he notes: (1) recurrent lesions in one organ or system, (2) functional hyperexcitability, that is, the "exaggerated ego," the great resistance to bodily discomfort, which the author has found common to these patients; this diminishes in succeeding generations. The less resistant endocrine glands are first attacked by the disease, and later the more resistant.

In congenital syphilis the paternal influence is the more marked, according to Audrain, and also more variable from year to year. The maternal influence, on the other hand, steadily decreases in its intensity, so that the prognosis from this standpoint improves with succeeding pregnancies. The offspring of two congenital syphilitic people are usually more severely attacked than was either parent.

PARKHURST, New York.

SUBACUTE MALIGNANT PEMPHIGUS WITH EXTENSIVE BULLAE. L. BROCQ, GOUGEROT, DESAUX and RABREAU, Bull. Soc. franç. de dermat. et syph. **1**:2, 1921.

A discussion of this condition appears in the *Ann. de dermat. et syph.*, serie 5, volume 7, and extracts from it are quoted here. The patient, a woman of 35 years, had enjoyed the best of health until April, 1920, when bullous lesions appeared about the mouth, involving the mucosa. The eruption spread until the first examination, made on Nov. 30, 1920, showed it to be generalized; the chest, back and lips were most severely affected, the lesions being confluent, while on the extremities they were scattered. The elementary lesion was a bulla with flaccid walls, with no attendant erythema; its contents were at first clear, but soon became cloudy. There was no pruritus. Rupture of the bullae revealed raw, weeping surfaces which were excessively tender. The bordering epidermis was progressively undermined, so that neighboring lesions became confluent. There was no tendency to healing. A slight fever accompanied the eruption, and in the two last months diarrhea and hematuria developed. Jan. 6, 1921, the lethal exitus occurred.

The bullae contained no bacteria, but a few eosinophil leukocytes. No satisfactory results were obtained in subsequent bacteriologic examinations, but it was thought that streptococci or the *Bacillus pyogenes* might have been causative.

PARKHURST, New York.

AN X-RAY BURN OF THIRD DEGREE FOLLOWED BY RAPID HEALING. EDWARD S. BLAINE, Am. J. Roentgenol. **8**:183, 1921.

A colored patient being treated for extensive blastomycosis of the pelvic region was inadvertantly given a double exposure by an assistant. A complete tissue breakdown rapidly developed, and in eleven days the entire abdominal wall, the skin, subcutaneous and muscle tissues, in the exact areas treated, about 3 inches in diameter, had disappeared down to the peritoneum. The coils of intestines could be seen through the thin peritoneum which appeared as a more or less transparent veil. The patient did not complain

of much pain. No medication of any kind was given. In fifteen days the brokendown tissue had increased only slightly in extent. During the next few days a surprising change took place, and in one week one hardly recognized the area. The edges had filled apparently with regrown tissue, the hole had closed, and in thirty-nine days no definite evidence of the accident was visible. The remaining areas of revived blastomycotic growth were subsequently treated by roentgen- ray dosage of the same formula, and a complete cure was obtained. No untoward sequelae have occurred in three years, and the patient is now working.

GOODMAN, New York.

UNILATERAL CUTANEOUS INVOLVEMENT (THE TRUNK AND LOWER EXTREMITY) WITH PIGMENTATION, LEUKOMELANODERMA, INFILTRATION IN PATCHES; TROPHIC ULCERATIONS AND A ZOSTERIFORM DISTRIBUTION OF THE LESIONS. SPINA BIFIDA OCCULTA. L. QUEYRAT, A. LERI and RABUT, Bull. soc. franç. de dermat. et syph. **4**:116, 1921.

A woman, 28 years of age, had first noticed the cutaneous manifestations in 1909, the calf being first involved. Fleeting paresthesias preceded and accompanied the involvement, which at first had a slate colored mottled appearance. It spread, including the thigh and the lower part of the trunk. There were trophic ulcers, first of the leg, then of the thigh. An examination revealed a spina bifida occulta of the eleventh and twelfth dorsal and the first lumbar vertebrae, in exact agreement with the distribution of the cutaneous lesions. The sacrum was also bifid, and there was considerable scoliosis.

Leri, the neurologist, reports three cases of spina bifida with trophedema, which may occur late in life; he speaks of pigmentation due to cord injuries. He and Darier are of the opinion that here we may have an explanation for some obscure cutaneous lesions. A fault in the nerve structures is the probable cause, rather than the vertebral discontinuity.

PARKHURST, New York.

ERYTHEMA CHRONICUM MIGRANS. A. AFZELIUS, Acta dermat.-ven. **1**:120, 1921.

In a recent issue of *Acta Dermato-Venereologica* (**3-4**:422, 1920), Strandberg described a case under this name, a designation which was first suggested in 1908 by the author, Afzelius. Starting from a central papule, a narrow, scarcely elevated ring spreads peripherally, preserving its circular form for several weeks or even months, finally to disrupt and fade out. In many cases insect bites have been blamed, and the author thinks it likely that they are always causative. The pathology is thought to be that of a cellulitis rather than a lymphangitis, as has been alleged. It is in some ways analogous to Rosenbach's erysipeloid. Since it disappears without treatment, its diagnosis eliminates the necessity of disfigurement by strong applications or by surgery.

PARKHURST, New York.

TWO CASES OF LYMPHANGIOKERATOMA CIRCUMSCRIPTUM NAEVIFORME. FABRY and ZIEGENBEIN, Dermat. Wchnschr. **72**:53 (Jan.) 1921.

The patient in Case 1 was a man 45 years of age, the disease had begun in childhood. The lesions were situated on the back and outer surfaces of the

lower portion of the right leg and ankle and consisted of groups of closely aggregated vesicles and raised nodular masses covered over grayish-white or grayish-violet warty, horny substance. The lesions had occurred after excision several years before.

Case 2 was that of a boy 9 years of age who had had the disease since birth. The lesions were situated on the dorsal and inner surfaces of the left foot and were similar to those in Case 1. The diagnosis was confirmed by histologic examination.

The author states that the association of hyperkeratosis with the circumscribed lymphangiomas has been noted previously only by Francis. He calls attention to the nevus-like distribution of the lesions in his cases.

KETRON, Baltimore.

LYMPHADENOMA OF THE VELUM PALATINUM ARISING FROM THE TONSIL. MILIAN, COTIENOT and MOUQUIN, Bull. Soc. franç. de dermat. et syph. **3**:71, 1921.

On July 17, 1920, a shoemaker appeared complaining of a painful ulceration of the left tonsillar region which had persisted for two years. A tonsillectomy had been of no help; the ulceration deeply invaded the posterior portion of the soft palate. Although the Wassermann reaction was repeatedly negative, the patient's wife had had two miscarriages, and the suggestive appearance of the ulcer prompted the administration of eleven neo-arsphenamin injections, totalling 5.85 gm. Healing promptly followed, but four months later the patient had to be hospitalized for a recurrence, this time for a shallower, though painful ulcer involving tissue adjacent to the scar of the former lesion. Again the Wassermann reaction was negative, and neo-arsphenamin was given with no benefit. While the blood picture and general physical findings did not suggest it, nevertheless a biopsy showed the ulcer to be typically lymphogranulomatous, and it responded readily to intensive cross-firing with the roentgen rays, only to recur once more fifteen days later. It was thought by some to be an "episyphilitic" phenomenon.

PARKHURST, New York.

THE INFLUENCE OF SYPHILIS ON THE PREGNANT WOMAN. GEORGE GELLHORN, Surg. Gynec. & Obst. **32**:535, 1921.

Gellhorn takes the attitude that the child has always had more consideration than the mother in syphilis in pregnancy. It appears that instead of running its usual course during pregnancy, syphilis is aggravated, and that many subjective symptoms of the disease are evident. Local manifestations, especially of the mucous membranes, are intensified. Primary lesions are said to be larger and more persistent. Condylomata lata increase in size and number, and the swelling of the glands makes rapid progress and not infrequently terminates in suppuration.

During labor syphilis in the mother may cause abnormal resistance of cervical tissues, or obstruction of the vaginal outlet. Malposition of the fetus may be due to syphilis because the fetus is either immature or macerated.

During the puerperium, the greatest danger lurks in infection because of retained membranes. Subinvolution may ensue.

Gellhorn's "practical conclusion is very obvious. Knowing that both mother and child are endangered, we must ever bear in mind the possibility of syphilis,

particularly when we have to deal with obscure recalcitrant disturbances in pregnancy, and once our diagnosis is made, we must give energetic and systematic treatment to such women throughout the period of pregnancy."

GOODMAN, New York.

A CONTRIBUTION TO THE STUDY OF THE ARSPHENAMINS; PEMPHIGUS FOLIACEUS FROM ARSPHENAMIN. J. NICOLAS and G. MASSIA, Ann. de dermat. et syph. **4**:145, 1921.

This rare complication develops rapidly after a few injections of arsphenamin, being ushered in by an erythematous papular or papulovesicular eruption. Its easily ruptured bullae, scales and flexural vegetations are those of ordinary pemphigus foliaceus, but there are no lesions of the mucosae, nails or scalp. Furthermore, the prognosis is good; there is complete recovery after a period of one or two months. Arsenical intoxication is possibly to blame, and we are warned to be cautious in the presence of the least erythema or flexural eczema.

The authors report three cases observed within the past five years. In two pruritus was present, in one there was a transient nephritis, and in one gangrene of the foot occurred with a fatal outcome.

PARKHURST, New York.

ROENTGEN-RAY TREATMENT OF CUTANEOUS CANCER. H. H. HAZEN, J. A. M. A. **76**:1222 (April 30) 1921.

Hazen reports experiences in the roentgen-ray treatment of the various forms of cutaneous cancer.

Basal-Cell Cancer.—The large majority of patients were treated by measured dosage, using an interrupterless transformer and Coolidge tube. The dose was approximately 2 skin units, unfiltered in most instances. When deep infiltration was present, filtration through 1 mm. of aluminum was used. Most patients required at least three treatments to effect a cure; a few received from four to many.

RESULTS OF TREATMENT

	No. of Cases
Well 3 years	16
Well 2 years	17
Well 1 year	39
	72
Relapses cured	4
Relapses healed	2
*Healed	41
	119
Not cured	16

*Healed represents clinically cured cases that have been followed for less than one year.

It should be noted that epitheliomas involving the cartilage of the ear or eyelid are particularly resistant to this form of therapy. Intractability of cancers involving cartilage is probably due to the failure of cellular reaction in the invaded tissue.

There were eleven relapses in this series of basal cell growths. All relapses developed within the first year after treatment.

Prickle-Cell Cancer.—Fifteen patients with this type of growth were treated. Four were permanently cured; the lesions of three healed under treatment

(time too short since treatment to determine end-results); and eight were not in the slightest degree influenced.

Miscellaneous Growths.—Failure is reported in one case of rapidly growing sarcoma. In a patient with a malignant mole of the temple. The original growth was destroyed by one intensive treatment, but a year later metastases appeared and the patient speedily succumbed. A child with xeroderma pigmentosum was relieved of lesion after lesion for two years, but died at 4 years of age from the disease.

MICHAEL, Houston, Texas.

SYPHILIS-CARCINOMA. J. STRANDBERG, Acta dermat.-ven. **1**:8, 1921.

The author reports three cases of fatal epithelioma arising apparently on gummatous ground, two on the penis and one on the tongue. The patients were men about 60 years of age; two presented multiple cutaneous foci of syphilis. In none of the carcinomas were signs of syphilis found histologically, but this was perhaps due to the recent antispecific treatment.

Syphilis-carcinoma is compared with the much more common lupus-carcinoma, alleged causes for the frequency of the latter being its greater chronicity and its more marked tendency to epithelial proliferation. The rapid course of both is attributed to the lessened resistance of tissues already diseased.

Early diagnosis, though often wellnigh impossible without a biopsy, offers the only hope of saving the patient.

PARKHURST, New York.

PREVENTION OF ACUTE ARSPHENAMIN REACTIONS BY ANTI-ANAPHYLAXIS AND ATROPIN. G. J. BUSMAN, J. A. M. A. **76**:1302 (May 7) 1921.

Busman declares that practically all patients who exhibit an idiosyncrasy to arsphenamin as shown by the development of acute nitritoid reactions or late gastro-intestinal upsets may be protected by preliminary administration of atropin or the production of anti-anaphylaxis, or a combination of both measures.

If atropin is used alone, it is given in one dose of 1/50 grain twenty minutes before the injection of arsphenamin. The author's observations confirm those of Stokes as to the value of this drug.

The production of anti-anaphylaxis is accomplished by injecting a "vaccinating" dose (one tenth of the total dose) one hour before the subsequent larger portion is given.

In many patients, one or the other of these measures may suffice, but in highly sensitive patients the conjoint use of both methods is indicated. Under these circumstances the preliminary injection of one tenth of the total dose of arsphenamin is given, followed in twenty minutes by 1/50 grain of atropin, and twenty minutes later the remaining portion of arsphenamin is administered. The use of these methods has practically eliminated the reaction in susceptible patients and has made possible the continuance of treatment when repeated; severe reactions would otherwise have forced its abandonment.

MICHAEL, Houston, Texas.

STUDIES OF THE STABILITY OF BLOOD SUSPENSIONS IN SYPHILITIC PATIENTS UNDER TREATMENT. K. HEDEN, Acta dermat.-ven. **1**:74, 1921.

It has been found that in many febrile diseases, in pregnancy and in florid secondary syphilis blood corpuscles are deposited from a citrated blood more

rapidly than in normal persons. Similar changes have been found in other syphilitic conditions, including late neurosyphilis and arteriosclerosis. This may be due to changes in the hydrogen-ion concentration of the blood.

In a series of eighty-six patients, the author has found that the administration of colloidal mercury and mercurial (gray) oil hastens sedimentation in a large percentage of cases, the former causing more alteration than the latter. This is thought to be a danger signal. Anemia is an important cause of quick sedimentation, and should be ruled out by a blood count in each case. In active syphilis a too rapid sedimentation may be remedied by treating the disease. Arsphenamin, unlike mercury, does not seem to produce instability of the blood suspension.

PARKHURST, New York.

THE SPIROCHETICIDAL VALUE OF DISODIUM ETHYL ARSINATE (MON-ARSONE). H. J. NICHOLS, J. A. M. A. **76**:1335 (May 14) 1921.

The claims made for the therapeutic efficiency of this drug, as well as requests for information on this point, led Nichols to investigate its effect on *Spirochaeta pallida* and experimental lesions. Rabbits were used exclusively in the investigation.

The experiments showed the minimum lethal dose of monarsone may be taken as 0.075 gm. per kilogram. The corresponding fatal dose for a 70 kg. adult would be 5.25 gm. The dose of 2 gm. which is advocated, is, therefore, closer to the theoretically dangerous point than is considered safe with other arsenicals.

The minimum effective dose was found to be 0.33 gm. Comparison of this result with that determined as the minimum lethal dose shows that the drug has as much or more poisonous effect on the tissues as on the spirochetes. For its practical use in syphilis there is no such germicidal basis as exists in case of the arsphenamin group.

Nichols quotes Voegtlin and Smith as finding for both sodium cacodylate and ethyl arsinate a ratio of minimum lethal dose: minimum effective dose of 1, while the same ratio for neo-arsphenamin was 28, and for arsphenamin 17. These investigators used trypanosomes as test organisms.

MICHAEL, Houston, Texas.

A VERRUCOUS AND HYPERKERATOTIC FORM OF MYCOSIS FUNGOIDES IN THE PREFUNGOID STAGE. E. JEANSELME and M. BLOCH, Bull. soc. franç. de dermat. et syph. **4**:110, 1921.

This unusual manifestation was presented by a woman, 35 years of age. In 1914 she had noticed the presence of three nonpruritic erythematous patches which remained for a month and disappeared with the advent of pregnancy. Three years later a new and similar eruption appeared, with a moderate pruritis; this time it persisted, involving the skin of all regions but sparing the mucous surfaces. There was slight malaise and loss of weight. A moderate leukocytosis was present, with a 6 per cent. eosinophilia; there was anemia with a high color index; firm, discrete lymph nodes were palpable in the groins and axillae. Sections from a biopsy showed the characteristic picture of mycosis fungoides.

Roentgen-ray treatment dispelled the lesions, leaving only pigmented spots, slightly infiltrated in places.

PARKHURST, New York.

CONGENITAL SYPHILIS OF THE SECOND GENERATION. MILIAN and VALLE, Bull. Soc. franç. de dermat. et syph. **4**:114, 1921.

A boy of 7 years, whose nose and palate were the site of extensive destruction, presented unmistakable signs of the congenital affection, such as interstitial keratitis, rhagades, prominent frontal bossae and sluggish mental development, in addition to a strongly positive Wassermann reaction. The father had been killed at war; he had shown no signs of syphilis. The mother, however, presented stigmas of congenital syphilis, a perforation of the palate and a saddle-nose. She had had no miscarriages. The maternal grandfather had long been tabetic.

Jeanselme and Simon, in the discussion, each mention a case of this transmission in which the father was apparently free from the disease. Apropos of the similarity of the lesions in mother and child, Pinard recalls such a case which was reported by Queyrat in 1906.

PARKHURST, New York.

HEREDOLUETIC DISEASES OF CENTRAL NERVOUS SYSTEM IN CHILDHOOD. O. TEYSCHL, Ceska Dermat. **2**:177, 1921

The author reports several cases of congenital syphilis of cerebrospinal type in children. He advises an examination of blood and spinal fluid in all nervous affections in children, no matter what the anamnesis is, as in all cases a syphilitic basis could be determined. He considers the usual dose of arsphenamin as recommended by Peritz (0.01 gm. per 1 kg. of body weight) too high and advises an individual modification. He believes it advisable to put a new-born child of syphilitic parents immediately on an antisyphilitic treatment, whether the child bears signs of syphilis or not.

SPINKA, St. Louis.

THE SKIN AND ITS REACTIONS. ARTHUR J. HALL, Lancet **20**:426 (Feb. 26) 1921.

The author considers the following points in the relation of skin diseases to internal disorders: 1. The skin is not merely a covering, but itself an important organ. 2. Its duties relate chiefly to events occurring outside the body. 3. While some of these reactions are local processes in the skin, the majority of them are controlled and regulated by the central nervous system and are in the nature of reflex actions. 4. Like all other reflex actions, they are capable of excitation from places other than the outside and of being modified by the condition of the central nervous system resulting from changes in the internal organs. In this sense, they must depend on the body as a whole at any given time. The author believes that many changes in the skin now attributed to internal disorders are capable of explanation as natural reactions of the skin to definite stimuli. Emphasis is placed on personal idiosyncracy to certain irritants with a record of an interesting case.

WAUGH, Chicago.

A CLINICAL, EXPERIMENTAL AND PARASITOLOGIC STUDY OF THE ERUPTION IN MAN PROVOKED BY THE SARCOPTIC ITCH OF THE CAT. G. THIBIERGE and J. STIASSNIE, Bull. Soc. franç. de dermat. et syph. **1**:17, 1921.

Thibierge described this eruption in the *Gazette des Hopitaux*, Jan. 31, 1911, and this is a report of further observations, with reference to several cases.

The eruption may involve only the part of the body which has been in contact with the cat, such as the chest or the shoulder, or, if contact has been prolonged, it may be extensive and even generalized. The element is a small papulovesicle on a wheal-like base; soon excoriated, it becomes crusted at the center, bearing some resemblance to a prurigo papule. Their appearance in successive crops gives the whole a polymorphous appearance which is misleading. There is nothing characteristic about the eruptive element, so that the diagnosis is difficult unless this possibility is kept in mind.

The causative parasite is present in the skin for twenty-four hours after contact with the infected cat, and it can occasionally be found in the lesions. It is the sarcoptes minor. This eruption is comparable to those arising from horse mange and from pediculoides ventricosus.

PARKHURST, New York.

THE INFLUENCE OF LUMBAR PUNCTURE ON SYPHILITIC ERUPTION. KARL SCHREINER, Wien. klin. Wchnschr. **34**:264, 1921.

It has often been noted during the last year that patients in the secondary eruptive stage of syphilis have shown marked improvement in lesions even with no treatment if lumbar puncture has been performed. Pustular eruptions seem to be influenced best, but moist, even condylomatous, lesions have shown a change for the better. Although no definite records are given, it is stated that on several occasions when more than the ordinary amount of fluid was withdrawn, the improvement was more marked. On the other hand, several failures to withdraw fluid were accompanied by clinical improvement, and it was thought that the preliminary epinephrin-cocain anesthesia may have been the cause of the change. Several patients, nonsyphilitic, were treated by injections of epinephrin. Scrotal eczema showed startling improvement with this treatment alone; there was less marked improvement in a case of varicose ulcer and in a case of scrotal eczema.

GOODMAN, New York.

ANAPHYLACTIC URTICARIA. G. PIGNET, Ann. de dermat. et syph. **4**: 184, 1921.

In a tuberculous patient the nineteenth injection of a calcium-potassium-manganese compound produced a fleeting urticaria and malaise; the twentieth, three days later, was followed by a more pronounced systemic reaction and a rather severe urticaria of 48 hours' duration. The injections were discontinued for three months and then renewed, 1 mg. of epinephrin having first been given. An erythema immediately developed along the course of the veins used for the previous injections, although this time the opposite arm was used. This local erythema soon became a large urticarial wheal. It may have been that the walls of these veins were still impregnated with the manganese salts, but no positive explanation of the reaction could be offered.

PARKHURST, New York.

PAPULONECROTIC TUBERCULIDS OF THE FACE (ACNITIS). MILIAN and THIBAUT, Bull. soc. franç. de dermat. et syph. **4**:112, 1921.

A woman, 31 years of age, presented the characteristic lesions of Barthelemy on the forehead, eyelids and nasolabial regions, and on the sides of the neck. She said they had been present for six months. A concomitant syphilitic infec-

tion had been treated without the slightest alteration in the facial lesions, and their true nature was subsequently shown by histologic examination. The physical examination revealed signs of apical pulmonary involvement, supposedly tuberculous. The patient had never menstruated.

PARKHURST, New York.

SYPHILITIC IRITIS: ITS RACIAL INCIDENCE AND ITS ASSOCIATION WITH SECONDARY SYPHILIS AND WITH NEUROSYPHILIS. F. L. ZIMMERMANN, J. A. M. A. **76**:1818 (June 25) 1921.

Among 228 white patients with secondary syphilis in the Johns Hopkins Clinic, there were four, or 1.76 per cent., with acute iritis; among 279 negroes, iritis occurred in thirty-six, or 12.9 per cent.

The incidence of iritis in all types of syphilis was 1.1 per cent. for white, and 3.2 per cent. for negro patients.

In the negro, iritis occurs in 10 per cent. of all cases of secondary syphilis, with a great predilection (approximately 33 per cent.) for the follicular papular syphilid.

The incidence of cerebrospinal abnormalities was not greater in partially treated patients with iritis than in the fluids of treated patients who had not had iritis.

MICHAEL, Houston, Texas.

A COMPARISON OF THE ACTION OF MERCURY ON THE BODY WEIGHT WITH THAT OF ARSPHENAMIN. J. ALMKVIST, Acta dermat.-ven. **1**:91, 1921.

In general the author found that arsphenamin increased the body's weight while mercury caused a diminution. This was repeatedly shown in a series of cases, with exceptions of course. It was often found that when the two treatments were given in alternate courses, the weight of the patient would vary accordingly. Interesting tables are given, and the discussion is exhaustive, with a long bibliography.

The moral is: When the patient loses weight under treatment, endeavor first to stop the loss by hygienic measures, both oral and general, and by stimulating the appetite; failing in this, the dosage of mercury must be reduced.

PARKHURST, New York.

A SYPHILITIC CHANCRE OF THE VAGINA. H. BREIDE, Acta dermat.-ven. **1**:114, 1921.

Perhaps because they are easily overlooked, vaginal chancres are thought to be rare, relatively few having been reported. It is possible that the structure of the vaginal wall and its secretions may discourage infection.

A girl of 20 years, with a typical early secondary eruption that involved the skin but not the mucosae, presented a typical sclerosis of the right vaginal wall 2 cm. below the cervix. There was no inguinal adenopathy; no spirochetes were found. The Wassermann reaction was found to be positive, and all the manifestations soon disappeared under antisyphilitic treatment.

The literature on the subject is briefly reviewed.

PARKHURST, New York

SYPHILIS IN CHILDREN OF SCHOOL AGE. B. F. DONALDSON, New York J. Med. **21**:176 (May) 1921.

Of 28,000 school children, 167 were found to show evidence of organic heart disease, and among these there were thirteen cases of aortic insufficiency. Eighty-four of the children were selected for special observation, and 103 Wassermann reactions were performed on these and on the mothers and available relations of children with aortic insufficiency. A positive Wassermann reaction was obtained in only one child, a compensated case of aortic insufficiency, apparently in good health, with a history of tonsillitis and one attack of rheumatism. The mother's Wassermann reaction was ++++. The patients with aortic cases all had definite histories of acute rheumatic fever, except one who had only diphtheria.

WILLIAMS, New York.

CUTANEOUS PIGMENTATIONS FOLLOWING SECONDARY SYPHILIDS. G. THIBIERGE and J. STIASSNIE, Bull. Soc. franç. de dermat. et syph. **3**:70, 1921.

This case was shown to emphasize the fact that pigmented spots may remain in the sites of faded secondary syphilodermas. A servant girl, aged 23 years, who had just recovered from rather severe secondary manifestations, presented such pigmentation about the neck in spots in which papulosquamous lesions had faded. They were configurate in places, especially at the front and sides of the neck.

According to Darier, the pigment in these lesions is located equally in the papillae and in the epidermis. By way of treatment, Balzer recommends the use of 5 per cent. white precipitate ointment, which has given good results in his experience.

PARKHURST, New York.

MYELOPLAXOMA OF THE TONGUE. V. ALOI, Riforma med. **37**:219 (March) 1921.

Sarcoma of the tongue is rare. The case reported by Aloi commenced one year before on the right side of the tongue as a small ulcerating lesion which the patient thought due to trauma. A tumor developed from this ulcer, and, growing very rapidly, invaded the whole organ forming an edematous, red mass which prevented the closing of the mouth and made speech impossible. The tumor was very painful, and the patient lost weight and rapidly became cachectic. Microscopically the diagnosis was sarcoma (myeloplaxoma). The author thinks that the origin of this tumor was in all probability in an embryonic nucleus of periostic tissue abnormally included in the tongue.

PARDO-CASTELLO, Havana.

A CASE OF URTICARIA PIGMENTOSA. MILIAN and PERIN, Bull. soc. franç. de dermat. et syph. **4**:126, 1921.

Occurring in a woman 58 years of age, in whom it had persisted since her 38th year, this eruption was doubly interesting because of its late appearance and its chronicity. Furthermore, there was a concomitant glycosuria, suggesting the possibility of hepatic trouble, which may play a part in the etiology of urticaria pigmentosa as it often does in xanthoma. The existence of syphilis invited speculation as to whether the hepatic and cutaneous alterations might not both be of specific origin.

PARKHURST, New York.

A CASE OF LYMPHANGIOMA OF THE BUTTOCK. G. THIBIERGE and P. LEGRAIN, Bull. soc. franç. de dermat. et syph. **4**:128, 1921.

A girl of 27 years presented a typical superficial lymphangioma of verrucous and vesicular appearance, present since birth, but which had not grown perceptibly until the tenth year. When last examined it was 12 cm. long and 7 cm. wide. Histologically there was found a surrounding area of fibrosis, deprived of elastic tissue, an inflammatory small lymphocytic infiltration and a perivascular plasmoma.

PARKHURST, New York.

THE HISTOLOGIC STRUCTURE OF HEMOLYMPHANGIOMA. HUDELO and CAILLIAU, Bull. soc. franç de dermat. et syph. **4**:130, 1921.

This case had been presented at the last meeting of the Society, and the lesion had since been excised, sectioned and studied in detail. Both the subpapillary and the subdermal blood and lymph vessels were found to be involved, and there was considerable degree of connective tissue and muscular atrophy: the sudoriparous and sebaceous glands were also hampered.

A detailed report is given, with two illustrations.

PARKHURST, New York.

PHOTOTHERAPY IN BENIGN DISEASES OF THE SKIN. HERBERT F. PITCHER, Am. J. Electrotherap. & Radiol. **39**:143 (April) 1921.

This clinical paper dealing with the more common applications of the roentgen ray and ultraviolet ray in dermatology in which the static brush discharge and the vacuum and nonvacuum high frequency electrodes are advocated as auxiliary measures. The author claims that he obtained excellent results in the treatment of lupus erythematosus by using the water-cooled quartz-mercury vapor lamp with compression to cause ischemia, in exposures of from five to thirty minutes' duration, at weekly intervals, during a period of from three months to two years.

H. R. FOERSTER, Milwaukee.

TERTIARY SYPHILIDS OF THE FACE RESEMBLING LUPUS VULGARIS, REMARKABLY CONFLUENT. PAUTRIER, Bull. Soc. franç. de dermat. et syph. **4**: R. S. 13, 1921.

The patient, 40 years of age, was the mother of six children, five of whom were living and well. The cutaneous lesions, of two and a half years' duration, had first appeared on the chest, later involving the arms, face and scalp. There were many soft brown nodules, similar to those found in lupus vulgaris, but the gyrate arrangement of the lesions on the arms, the history of a very short duration, and the positive Bordet-Wassermann reaction all spoke in favor of syphilis. Within six weeks the patient received 4.2 gm. of neo-arsphenamin and seven injections of calomel; there was marked improvement in the lesions.

PARKHURST, New York.

A SYPHILITIC SCLEROGUMMATOUS INFILTRATION OF THE TYPE OF HYPODERMIC SARCOID. BURNIER and M. BLOCH, Bull. soc. franç. de dermat. et syph. **4**:136, 1921.

A deep, nonulcerating infiltration of the calf was presented by a man, aged 38 years, who had had a chancre twenty-two years previously. The tumor had been present for eighteen months, and had finally attained a length of

13 cm. and a width of 6 cm. The muscles of the leg were involved. A biopsy was performed, and the sections showed the typical structure of hypodermic sarcoid. After eight days of treatment with mercury cyanid and potassium iodid, the infiltration had diminished one third. The tuberculin reaction had been negative, and syphilis must here be considered as an etiologic factor.

PARKHURST, New York.

STUDY OF THE ACTION OF CERTAIN DRUGS ON SYPHILIS. M. COPELLI, Gior ital. d. mal. ven. **67**:24, 1921.

There are certain drugs, besides arsenic, mercury and iodin, which experimentally exert a favorable influence on syphilitic lesions. These are vanadium, phosphorus and antimony. Vanadium and antimony, especially, have shown, according to the author's observations, remarkable antisyphilitic properties. Two or more of these drugs united in a chemical compound seem to be more active. A preparation of arsenic, vanadium, phosphorus and antimony with a molecule of an organic acid (nucleinic) has proved to be highly parasitotropic without any toxic action on the cells of the host. This compound is therefore a valuable spirocheticide.

PARDO-CASTELLO, Havana.

A DISSERTATION UPON CARBUNCLES. SIDNEY PHILLIPS, Lancet **200**: (Jan.) 1921.

The author quotes the opinions of many authorities in regard to their views of a carbuncle. Some regard a carbuncle as an affection of the skin only, others as an affection of the skin and subcutaneous tissue, while others do not believe the skin is involved at all. Phillips believes that it is a gangrene of deep skin or deeper tissues due to a local invasion of pyogenic bacteria. The author discusses the cause of sloughing, the pathology, symptoms and types of carbuncles, also diagnosis and treatment. The article is lengthy and covers the subject thoroughly. Nothing new of importance is suggested regarding treatment.

WAUGH, Chicago.

MULTIPLE EXTRAGENITAL SYPHILITIC CHANCRES. H. ENGELSON, Acta dermat.-ven. **1**:69, 1921.

Two cases are reported: that of a girl of 22 years with a chancre on each lip, and that of a girl, aged 24, with a lesion on each tonsil. In the second case spirochetes were found, their absence on examination in the first case being attributed to the recent use of strong antiseptics. In each there was a clear-cut history of infection by the kisses of a syphilitic lover. The lesions soon disappeared under antisyphilitic treatment, but the second patient unfortunately acquired a generalized desquamative arsphenamin eruption which lasted four months.

PARKHURST, New York.

RAYNAUD'S SYNDROME WITH GANGRENE, FOLLOWING NEO-ARSPHENAMIN. J. NICOLAS, G. MASSIA and D. DUPASQUIER, Ann. de dermat. et syph. **5**:193, 1921.

A Swiss mechanic, 28 years of age, who probably did not have syphilis, had nevertheless received several small neo-arsphenamin injections. After the first and each succeeding injection, there were paroxysms of acrodynia with

acrocyanosis, at first fleeting but later persistent, the fingers, toes, tip of the nose and ears being affected. After three months gangrene ensued, with loss of the finger-tips. As there had been no sign of the affection before the arsenical was given, neo-arsphenamin is blamed.

PARKHURST, New York.

TWO CASES OF PIEDRA. L. PAIS, Riforma med. **37**:266 (March) 1921.

Two cases of this rare disease of the hair are reported. The nodules in both cases were made up of spores closely aggregated. The cultures identified the fungus as the *Trichosporum beigeli*. Intravenous injections of the cultures in rabbits and skin inoculations in human beings gave negative results. The author concludes that the *Trichosporum beigeli* has no pathogenic properties, but lives as a saprophyte on the hair.

PARDO-CASTELLO, Havana.

THE FILIFORM DOUCHE IN DERMATOLOGY. A. DESAUX and NOEL, Ann. de dermat. et syph. **5**:218, 1921.

A description of this apparatus has been previously given in a similar article by Veyrieres and Ferreyrolles, which appeared in the *Annales* (**4**:156, 1921) and has been abstracted. The general scheme of treatment recommended is given in the following table:

Lesion	Temperature of water	Pressure of Water	Diameter of Jet	Duration of Application
Acne	38-40 C.	5-7 atm.	½-1 mm.	Variable
Rosacea	35-38 C.	5 atm.	½-1 mm.	5-10 min.
Acne and rosacea	38-40 C.	5-6 atm.	½ mm.	Variable
Facial folliculitis	40 C.	3-7 atm.	½ mm.	Variable
Neurodermite	38-40 C.	5-8 atm.	½-1 mm.	Variable
Old lichen planus	40 C.	6-8 atm.	½ mm.	Variable
Facial verrucae planae*	35-38 C.	4 atm.	¼ mm.	Brief
Lupus vulgaris*	35 C.	6-7 atm.	½ mm.	Long and thorough
Fixed lupus erythematosus*	40 C.	6-7 atm.	¼-½ mm.	5-6 min., thorough

* Not superior to other modes of treatment here.

In all except lupus vulgaris the treatments may be repeated, and parts of extensive lesions are treated at different sittings. Healing is prompt and scarring slight. In lupus vulgaris auxiliary measures may be needed, such as the curet or the cautery. Anesthesia is usually unnecessary, except in the treatment of lupus.

This subject will be dealt with more fully in a future paper.

PARKHURST, New York.

TINEA OF THE BEARD CURED RAPIDLY BY INTRAVENOUS INJECTIONS OF GRAM'S SOLUTION. P. RAVAUT, Ann. de dermat. et syph. **5**:229, 1921.

Other treatments having been of no avail, a stubborn case of nearly four months' duration was soon cured by twelve intravenous injections of Gram's solution, given every other day, in doses increasing from 1 to 5 cm., diluted in water. Although the use of external treatment is ordinarily simpler, this result is considered interesting in view of the exercise of internal influences, such as the hormone changes at puberty or the changes effected in this case, in bringing about a cure.

PARKHURST, New York.

CONGENITAL SYPHILIS AMONG THE NEWLY BORN. S. M. Ross and A. F. Wright, Lancet **200**:321 (Feb. 12) 1921.

This article contains an interesting report of an investigation by the authors to determine the presence of congenital syphilis in unsuspected cases. The blood was secured at birth from the placental end of the umbilical cord, part of the specimen being sent to each laboratory. The authors state that the number of specimens (284) are too small from which to draw any definite conclusions, but the results obtained were significant and warrant further investigation, since 3.5 per cent. were found positive by both observers using entirely different methods in different laboratories.

Waugh, Chicago.

EXPERIMENTAL CHANCROID IN THE MONKEY AND THE RABBIT. J. Reenstierna, Acta dermat.-ven. **1**:1, 1921.

In a monkey (*Macacus rhesus*), at the site of inoculation with pure cultures of the streptobacillus chancroids developed clinically typical in appearance. The streptobacillus was obtained from the pus, and it was also demonstrated in sections from the lesions. Its inoculation into the author's arm gave rise to typical chancroids, from which were obtained the organisms in pure culture.

Scrotal inoculations produced typical lesions in four of ten rabbits. Streptobacilli were recovered and produced chancroids on the arm of the author, which in turn yielded the organism in pure culture.

Similar inoculations into ten guinea-pigs, ten white mice, one rabbit, one goat and four sheep gave completely negative results.

The cutaneous reaction of Ito (with streptobacillus vaccine) on the author's arm ten months after these inoculations gave a strongly positive result.

Parkhurst, New York.

MEDICAMENTS NEW AND OLD. O. Michaelis, Acta dermat.-ven. **1**: 23, 1921.

In essence this article is a discussion of the advantages and disadvantages of sulfarsenol (a proprietary arsphenamin preparation), which may be summarized as follows: In the treatment of syphilis it is not superior to neo-arsphenamin. It is said to be of value in the control of certain complications of gonorrhea; this the author discusses at some length.

Parkhurst, New York.

CAN SPIROCHETES CAUSE PSORIASIS? P. Savnik, Ceska Dermat. **2**:161, 1921.

The author reviews the literature on the subject and reports the results of his personal investigations. He does not consider the cocci and spirilla found in psoriatic scales as etiologically significant; such can be found in other skin diseases and even in a normal skin. He has not found the spirochete "sporogona psoriasis" of other authors in any of his specimens. On several occasions, however, he did notice the presence of small, round, actively motile, shiny bodies, forming chains of 2, 3, 5 and 8 individuals and joined by a fine dull filament.

Spinka, St. Louis.

NOTES ON MONGOLISM. Hugh Thursfield, Brit. J. Child. Dis. **205-207**:18 (Jan.-March) 1921.

These notes concern forty-two mongol children seen by the author between 1912 and 1916. He could not attribute the condition to syphilis or tuberculosis. Some of the accompanying defects are briefly considered. The fissured tongue, so pronounced and characteristic in older mongols, is not present for the first few months of life. The author has seen it as early as the twelfth month, but it is not usually a striking peculiarity until after dentition has advanced, in the second year. By the fifth year it is generally marked. There was also noted scantiness of hair, a scurvy skin, and a tendency to catarrhal conditions of the upper respiratory tract.

Parkhurst, New York.

A CASE OF MULTIPLE LEIOMYOMAS OF THE SKIN. Burnier and M. Bloch, Bull. Soc. franç. de dermat. et syph. **1**:24, 1921.

The patient was a man, aged 43 years, who had first noticed the condition eight years previously. At that time a nodule appeared on the neck, and three years later more of them developed on the trunk, forarm and leg. These tumors were pea- to lentil-sized, brownish-yellow, firm and at times tender and even painful. A histologic study showed the growth to consist of bundles of smooth muscle fibers, not walled off from the surrounding tissues. A few lymphocytes, plasma cells and mast cells were found. The tumors disappeared under bipolar electrolytic treatment. Darier remarks that in these cases radiotherapy is useless.

Parkhurst, New York.

LATENT SYPHILIS IN A MEDICAL DEPARTMENT. E. Hess Thaysen, Lancet **200**:213 (Jan. 29) 1921.

The author discusses the frequency of positive Wassermann reactions in medical cases with, and in the absence of, a syphilitic history and advises the test as a routine measure. The diagnostic value of the Wassermann test is considered carefully, and the difficulty as well as the danger of basing a diagnosis on a positive Wassermann reaction in the absence of clinical findings is admitted. The article is very interesting and should be read in its entirety by those interested in the subject.

Waugh, Chicago.

A CASE OF SYPHILITIC REINFECTION. E. Jeanselme and Althabegoity, Bull. Soc. franç. de dermat. et syph. **1**:10, 1921.

The authors urge that all cases of suspected reinfection be scrutinized thoroughly before presentation, so that only bona fide cases may go on record. Theirs presented the following points: 1. The second chancre was in a different site from the first. 2. It was erosive, not ulcerated. 3. It contained abundant *Spirochaetae pallidae*. 4. The patient had been thoroughly treated for four years after the first attack. At the time of the occurrence of the second chancre the blood and the spinal fluid were examined and found normal.

Parkhurst, New York.

A CHRONIC RELAPSING BULLOUS AND PUSTULAR ACRODERMATITIS. Hudelo and Picard, Bull. Soc. franç. de dermat. et syph. **1**:12, 1921.

A boy of 11 years had been afflicted since he was 2 years old, each outbreak being preceded by general malaise and vague paresthesias. The hands

and feet were especially involved, there being a painless paronychia and extensive nail deformity. The arms, legs and face also showed lesions, the bullae being surrounded by erythematous halos, and of short duration, the pustules being small, intensely inflammatory and more persistent. One of several Wassermann reactions was positive, and antisyphilitic treatment was administered. Locally, various antiseptic dressings were applied, and finally endocrine therapy (thyroid and suprarenal) with roentgen rays and high frequency treatment, but the attacks continued almost as severely as before. This may have been a case of erythema multiforme, although the blood showed no eosinophilia, or the syphilis may have been a determining factor.

PARKHURST, New York.

A CASE OF POROKERATOSIS MIBELLI LIMITED TO ONE SIDE OF THE BODY. OTTO KONRAD SCHOLL, Dermat Wchnschr. **72**:1 (Jan.) 1921.

The disease occurred in a child, 16 months old, and was limited to the left side of the body. Epileptiform attacks began about the same time as the skin affection. Treatment was given with carbon dioxid snow.

KETRON, Baltimore.

DERMATITIS EXFOLIATIVA OF THE NEW-BORN, WITH EXTENSIVE FISSURES OF THE LIPS AND CHIN. G. THIBIERGE and J. STIASSNIE, Bull. Soc. franç. de dermat. et syph. **1**:15, 1921.

A baby, 1 month old, presented the picture of Ritter's disease, which had appeared ten days after birth. The peribuccal fissures resembled those of syphilis, which condition was excluded only after careful investigation of the patient and his parents. The patient was breast-fed, and showed a satisfactory gain in spite of the dermatosis.

PARKHURST, New York.

LYMPHANGIOMA CIRCUMSCRIPTUM. HUDELO and PICARD, Bull. Soc. franç. de dermat. et syph. **3**:80, 1921.

A girl of 22 years presented, in the left thorax, a spongy tumor measuring 3 by 4 cm. at the skin level, but somewhat more extensive beneath. Clinically and microscopically it showed the typical picture of hemolymphangioma.

Balzer recalls a case of extensive lymphangioma involving the lower abdomen, inguinal and genitocrural regions.

PARKHURST, New York.

A CONTRIBUTION TO THE KNOWLEDGE OF MELANOTIC TUMORS. WALTER TREUHERZ, Dermat. Wchnschr. **71**:963 (Nov.) 1920.

The author reports a case of generalized melanotic carcinoma in a woman, 26 years of age, resulting from the cauterization of a nevus on the back. Death followed within eleven months. The patient became pregnant soon after metastasis of the tumor had begun and gave birth to a child weighing 1,440 gm. a short while before her death. The child died within a few days of undernutrition and at necropsy no evidence of malignant growth was found.

KETRON, Baltimore.

AN OLD UNDETECTED SYPHILITIC PERIOSTITIS. TRAUMATISM BY A BULLET: A CONSECUTIVE TERTIARY CUTANEOUS SYPHILID "IN SITU." CLEMENT SIMON, Bull. Soc. franç. de dermat. et syph. **3**:82, 1921.

In November, 1916, a soldier received a bullet wound in the left forearm; it healed rapidly. In April, 1917, small nodules appeared in the scarred region; they disappeared spontaneously, to return in February, 1918. In April, 1918, he was seen by the author, who found the cutaneous lesions to be typical of tertiary syphilis. A radiograph showed extensive bilateral ulnar osteoperiostitis, and it was noted that the syphilitic scar was bound to the ulna. It is thought that the bullet wound, involving syphilitic periosteum, set free spirochetes which caused the subsequent cutaneous manifestations. The traumatism may have been a predisposing factor.

PARKHURST, New York.

NERVE INJURIES DUE TO ERRORS IN TECHNIC IN MAKING INTRAVENOUS ARSPHENAMIN INJECTIONS. D. LEWIS, J. A. M. A. **76**:1726 (June 18) 1921.

Arsphenamin injected into or about a nerve may have a marked destructive action, causing extensive degeneration of neuraxes and consequent deformities and other manifestations in the area of distribution of the injured nerve. Two cases are reported in which technical error in arsphenamin administration resulted in severe median nerve injury. The possibility of such a mishap is another reason for the exercise of extreme care in arsphenamin injections.

MICHAEL, Houston, Texas.

A CASE OF SYPHILITIC REINFECTION. CLEMENT, Bull. Soc. franç de dermat. et syph. **3**:106, 1921.

In 1918, a Serbian soldier, 33 years of age, presented symptoms of secondary syphilis, including lymphadenopathy, loss of hair and headache, together with a strongly positive Wassermann reaction; there was no history of chancre. Within five months a total of 15.25 gm. of neo-arsphenamin was administered, and his Wassermann reaction became negative.

In December, 1919, he was exposed to syphilitic infection and on Jan. 10, 1920, he presented a typical chancre of the balanopreputial fold, in which *Spirochaeta pallida* was found. This time mixed treatment was administered, and there were no further symptoms of syphilis.

PARKHURST, New York.

THE TOXICITY AND TRYPANOCIDAL ACTIVITY OF SODIUM ARSPHENAMIN. J. F. SCHAMBERG, J. A. KOLMER and W. D. RAIZISS, J. A. M. A. **76**:1823 (June 25) 1921.

The highest tolerated dose of sodium arsphenamin administered intravenously to white rats was found to be from 212 to 215 mg. per kilogram of weight. The average tolerated dose of arsphenamin was 105 mg. and of neo-arsphenamin 200 mg. per kilo.

Using rats infected with *Trypanosoma equiperdum* as test animals, these investigators found the therapeutic dose of sodium arsphenamin to be from eight to thirteen times less toxic than the highest tolerated dose. Arsphenamin

shows a ratio of dosis curativa: dosis tolerata of 21, and neo-arsphenamin a ratio of 22.

Thus, sodium arsphenamin possesses the low toxicity of neo-arsphenamin, but has a distinctly less curative value than either arsphenamin or neo-arsphenamin.

MICHAEL, Houston, Texas.

A CASE OF FETAL ICHTHYOSIS (BENIGN FORM). G. THIBIERGE and P. LEGRAIN, Bull. Soc. franç. de dérmat. et syph. **1**:8, 1921.

This case will be considered in an article soon to appear in the *Ann. de dermat. et syph.* A girl, 14 years old, with a negative family history had, since birth, presented a hyperkeratosis with a predilection for the flexures. There was a palmar and plantar keratoderma with hyperhidrosis, and a seborrhea of the scalp. The nails were markedly involved. Noteworthy points were the comparatively slight facial involvement, the absence of malformation of the lips, eyelids and nares, and the accompanying erythroderma; there were no bullae. Brocq classifies this as erythrodermie congenitale ichthyosiforme with hypertrophy.

PARKHURST, New York.

TREATMENT OF PSORIASIS WITH INTRAVENOUS INJECTIONS OF 20 PER CENT. STERILE SOLUTION OF SODIUM SALICYLATE. OTTO SACHS, Wien. klin. Wchnschr. **34**:185, 1921.

Since 1918, Sachs has treated thirty-four patients with psoriasis with intravenous injections of sterile sodium salicylate in 20 per cent. solution as follows:

First dose (10 c.c. of solution) 2 gm, followed in two or three days by 3 gm.; after two or three more days 4 gm. This dose is not exceeded. The total dosage required is from 21 to 28 gm. The injections are well borne, and the patients seldom complain.

Recent cases are most easily benefited. Inveterate psoriasis is difficult to control, and recurrence has been noted. The method is especially applicable in widespread cases in which massive external treatment is contraindicated.

The author is also working with aqueous solution of aspirin in psoriasis.

GOODMAN, New York.

TWO CASES OF ORIENTAL BOIL. GASTOU and PONTOIZEAU, Bull. Soc. franç. de dermat. et syph. **1**:19, 1921.

Both patients had been at Biskra, and they thought mosquito bites were causative. The lesions were on the lower extremities; they were multiple. In the first case the lesions were of very short, in the second of longer, duration. Considerable painless lymph-node enlargement was noted in the second case. By way of efficient treatment, Darier recommends the intravenous administration of tartar emetic once or twice a week in increasing doses. This must be given slowly, to avoid respiratory embarrassment.

PARKHURST, New York.

TWÓ CASES OF PARAPSORIASIS GUTTATA. GASTOU and PONTOIZEAU, Bull. Soc. franç. de dermat. et syph. **1**:22, 1921.

Both patients presented small papulosquamous, nonpruritic lesions with a general distribution, resembling those of lichen planus. In one case the urine contained a slight amount of bile pigment.

PARKHURST, New York.

ARSPHENAMIN TREATMENT OF PULMONARY GANGRENE. BELA MOLNAR, JR., Wien. klin. Wchnschr. **34**:255, 1921.

Arsphenamin has been found efficacious in pulmonary gangrene. Results are directly proportionate to the time after infection that the arsphenamin was injected. Early cases give the best prognosis.

GOODMAN, New York.

A CASE OF LEPROSY FROM ROUBAIX. CASTEL, Bull. Soc. franç. de dermat. et syph. **1**:23, 1921.

A Frenchman, 36 years of age, presented the nodular type of eruption in the usual locations. The incubation period was between six and seventeen years, the patient having been in the tropics during the supposed time of exposure. The Wassermann reaction was feebly positive. Hansen's bacilli were found in the nodules and sparsely in the nasal secretions.

PARKHURST, New York.

THE TREATMENT OF LUPUS BY FINSEN THERAPY. L. BIZARD, Bull. soc. franç. de dermat et syph. **4**:138, 1921.

It has been justly claimed that this method of treatment is tedious and expensive, but, as the author shows, it is most effective. Before a cure is pronounced, six months must have elapsed without a sign of recurrence. In the 457 cases treated the results have been as follows: Lupus vulgaris in 414 cases, 106 cures; lupus erythematosus in 21 cases, 6 cures; suppurating tuberculous adenitis in 22 cases, 8 cures. The other common methods of treatment are often advantageously combined with the Finsen therapy.

PARKHURST, New York.

CONCERNING A COMBINATION TREATMENT METHOD OF SUGAR AND ARSPHENAMIN. VIKTOR PRANTER, Wien klin. Wchnschr. **34**: 183, 1921.

Pranter has reported on the use of grape sugar solution followed by arsphenamin in the treatment of syphilis. (Abstracted in these ARCHIVES **3**:657, 1921.) He has gradually reduced the interval (twenty hours) between the two injections until at the present time he is dissolving the neo-arsphenamin in the grape sugar solution. The solution is said to be more stable than the water solution.

Brief case reports are given, which mention favorable results using this combination, although the doses of neo-arsphenamin were small, 0.15 gm. Several patients with psoriasis also showed improvement with this medication.

GOODMAN, New York.

A CASE OF PROBABLE LICHEN PLANUS OF THE DORSUM OF THE TONGUE. G. THIBIERGE and P. LEGRAIN, Bull. Soc. franç. de dermat. et syph. **4**:147, 1921.

The patient, 20 years of age, presented a noncharacteristic white plaque on the lingual surface, with a border of minute white punctae; along the interdental line of the right cheek there were two similar patches. The usual fine meshwork of lichen planus was lacking, but a biopsy examination showed the structure of lichen planus rather than of leukoplakia. There were no lesions of lichen planus elsewhere.

PARKHURST, New York.

A TECHNIC OF INTRAMUSCULAR (EPIFASCIAL) INJECTION. JOHN H. STOKES, Med. Rec. **99**:7 (April) 1921.

For these injections the author favors the inner and lower aspect of the upper outer quadrant of the buttock. The patient should lie prone on a table, be completely relaxed with the legs moderately rotated internally and arms hanging loosely over the edge of the table. Twenty-two gage needles are used, the length ranging from 1½ to 2½ inches, depending on the amount of subcutaneous fat. The buttock is drawn firmly downward with the left hand, and the needle introduced slightly inward and downward at an angle of 20 degrees. An attempt to aspirate is preferred to the removal of the syringe to determine whether the needle end rests in a blood vessel.

If the technic is carefully followed, the contents of the injection will be deposited in the areolar tissue on the upper surface of the fascia covering the gluteus maximus and result in less local irritation and more rapid absorption.

Various errors of technic are pointed out and their remedies given.

TOMLINSON, Omaha.

MYCOSIS FUNGOIDES IN A NATIVE OF MOROCCO. DECROP and SALLE (LACAPERE), Bull. soc. franç. de dermat. et syph. **4**:148, 1921.

Mycosis fungoides has rarely been observed in the natives of North Africa, hence this report. A Moroccan, 50 years of age, who had had the disease about ten years, presented a fairly generalized eruption with several small ulcerating tumors, one of which was excised. Histologic examination confirmed the diagnosis. The patient disappeared.

PARKHURST, New York.

SOME REMARKS ON THE DEVELOPMENT OF THE LEISHMAN-DONOVAN BODIES. J. E. R. MCDONAGH, Proc. Roy. Soc. **14**: No. 6. April, 1921.

The author reviews three cases in which Leishman-Donovan bodies were found. In one case, following a wound, there developed discrete granulomatous papules at the edge of the scar and similar lesions on the penis. In a second case, a man aged 52, had never been free of scattered cutaneous lesions which appeared suddenly as small papules, to become furuncles, then ulcers, finally healing after a crust had fallen off, leaving deep scars. The third patient presented a single lesion on the cheek resembling a frambesiform syphilid. Tissue removed from all three cases revealed strikingly similar pathology. There were present three zones: an outer layer of plasma cells, then a layer of plasma cells, lymphocytes and endothelial cells, and a center composed of endothelial cells. Typical Leishman-Donovan bodies were recovered in each case. The author speaks of *Leukocytozoon syphilidis*, and noting clinical resemblance between syphilis and Leishmaniosis, suggests that the Leishman-Donovan body is the mature form of an asexually produced protozoon which would suitably be named *Leukocytozoon Leishmania*.

GUY, Pittsburgh.

EPITHELIOMA OF THE TONGUE IN A MOROCCAN. DECROP and SALLE (LACAPERE), Bull. soc. franç. de dermat. et syph. **4**:149, 1921.

Visceral cancer in general is conceded to be a rarity in North Africa, but this does not apply to cancer of the skin. The authors have seen twenty-four

cases. Epithelioma of the tongue, however, is sufficiently rare to warrant the report of this case. A Moroccan, 50 years of age, who had contracted syphilis sixteen years previously, presented a typical lingual epithelioma, proved by biopsy. He refused treatment.

PARKHURST, New York.

THE INFLUENCE OF RARE EARTH SALTS ON THE INOCULABILITY OF THE LESIONS OF CUTANEOUS TUBERCULOSIS. C. LAURENT, Bull. soc. franç. de dermat. et syph. **4**:150, 1921.

Four patients, presenting scrofuloderma, lupus vulgaris and tuberculosis mucosae orificialis, were given two or three series of twenty intravenous daily injections, monkeys being inoculated after each series. All the inoculations were "takes," which proves that the bactericidal power of this medication is nil.

PARKHURST, New York.

THE OCCURRENCE OF PELLAGRA IN PATIENTS APPARENTLY RECEIVING AN AMPLE DIET. W. F. TANNER and G. L. ECHOLS, J. A. M. A. **76**:1337 (May 14) 1921.

An institutional patient, who was apparently receiving a liberal dietary, developed pellagra. Investigation showed, however, that the patient had been eating cereals and vegetables almost exclusively, though the meals included beef and milk.

The authors cite this instance to warn against the assumption that because a patient is provided with a certain diet this also is eaten. Unless this is remembered and the actual consumption of food investigated, occurrences of this sort would prejudice clinicians against the dietary etiology of pellagra. There is danger of drawing erroneous conclusions when the knowledge in hand concerns the available food supply rather than the diet actually consumed by the patient.

MICHAEL, Houston, Texas.

FOUR CASES OF HEREDITARY MONILETHRIX IN MOROCCANS. E. LEPINAY, Bull. soc. franç. de dermat. et syph. **4**:152, 1921.

Two young brothers, the father and the grandmother presented scalps typical of this affection. A third brother, who had died, was said to have had the same trouble. The eyebrows and lashes were always intact. Incidentally, the brothers were found to be congenitally syphilitic, with strongly positive Wassermann reactions.

PARKHURST, New York.

SYNDROME OF FAMILIAL EXOPHTHALMIC GOITER. LEREDDE and DROUET, Bull. soc. franç. de dermat. et syph. **4**:142, 1921.

In these cases, according to the authors, there is always some etiologic factor; they are never "essential." Some are syphilitic in origin; this is one of the several syndromes which may be produced by syphilis. This must be kept in mind and syphilis must be sought for and treated before other therapeutic measures are tried. The authors report a case in which neo-arsphenamin was effective.

PARKHURST, New York.

RADIUM THERAPY. G. RIEHL, Wien. klin. Wchnschr. **34**:182, 1921.

Riehl reviews the subject of radium in therapy, and recommends the use of its rays following operative procedures on superficial malignancies to avoid recurrence in the scar and for the following skin diseases: lupus vulgaris, scrofuloderma, lupus erythematosus, nevus vasculosus, hypertrophic scars, keloids, chronic eczema, lichen Vidal and leukoplakia oris.

Since the cost of radiation to some patients is prohibitive, the property of radium emanation should be utilized. For the Vienna hospitals, radium emanation is prepared a. the radium station, standardized, dosage noted as for day to be used and delivered, sometimes by post. Preparations are so made as to contain the desired dosage on day of receipt. Emanation loses more than 25 per cent. of its activity in less than four days, and after thirty-eight days possesses none at all.

The radium station also prepares emanation to be sold through pharmacies on physician's prescription.

GOODMAN, New York.

LYMPHANGIOMA OF THE BUTTOCK. PAUTRIER and O. ELIASCHEFF, Bull. Soc. franç. de dermat. et syph. **4**: R. S. 20, 1921.

A child of 9 years had had the malformation for eight years; its length, when first observed by the authors, was 12 cm. and it was 9 cm. wide. There were vegetations, resembling those of tuberculosis verrucosa cutis and many vesicles. The lower third of the derma was not involved. Treatment by cautery was proving most effective.

PARKHURST, New York.

A CASE OF URTICARIA PIGMENTOSA IN AN ADULT. O. ELIASCHEFF, Bull. Soc. franç. de dermat. et syph. **4**: R. S. 17, 1921.

A woman, aged 34 years, presented the typical manifestations of the disease, which she had evidently acquired during adult life. The usual intercollagenous mast cells were found in considerable numbers, although not forming a tumor. The etiology is still obscure.

PARKHURST, New York.

THE WHITE ADRENAL LINE (SERGENT); ITS CLINICAL SIGNIFICANCE. W. E. KAY and S. BROCK, Am. J. M. Sc. **161**:555 (April) 1921.

The adrenal line consists of a blanching of the skin following light stroking by a blunt object. It is pure white with no red element, lasts several minutes and is supposed to indicate hypo-adrenia, according to Sergent.

Two hundred and fifty-five cases were studied, and the assertion is made that the so-called white adrenalin line of Sergent is a local vasomotor reflex, resident in the skin and bears no direct relationship to adrenal gland activity. It was found to be independent of blood pressure, acute fatigue or other signs of hypo-adrenia; it occurred in normal persons and was peculiarly associated with scarlet fever. The vasomotor state allowing its best exhibition was found in young adults, especially those with scarlet fever.

JAMIESON, Detroit.

Society Transactions

NEW YORK DERMATOLOGICAL SOCIETY

Regular Meeting, May 25, 1921

JAMES MCF. WINFIELD, M.D., *President*

EPIDERMOLYSIS BULLOSA. Presented by DR. WISE for DR. FORDYCE.

A. C., a 3-year old boy of American birth, presented bullae in various stages, averaging about 2 cm. in diameter, sparsely scattered over the trunk and extremities. The sites of recent bullae were denuded of epidermis, and the older sites were pigmented. The oral mucosa was not involved. In the ears and on the fingers especially were seen the characteristic epidermal cysts of millet seed size. The nails of all the fingers and toes were absent, having been lost at the age of 10 months. The patient's three older brothers and sisters were normal, the parents likewise.

The diagnosis was accepted without dissent.

CASE FOR DIAGNOSIS (EPIDERMOLYSIS BULLOSA?). Presented by DR. BECHET.

L. R., aged 6, from Dr. Trimble's service, had had the eruption for which he was presented since the age of 6 months. The father stated that while the child underwent acute exacerbations from time to time, he had never been entirely free during that period. He also stated that the eruption at the time of presentation was at its worst. It consisted of grouped, sharply marginated, orbicular patches surrounding the eyes and the mouth. These patches seemed erythematous and vesiculobullous. The eruption was also present around the genitals, on the hands and legs, and in the mouth. There were small distinctly bullous lesions on the fingers and the remains of what might have been bullae on the tongue. There was an extensive alopecia, which the father said was always worse with the increase of the eruption elsewhere. With the involution of the eruption the hair returned. There were no lesions on the scalp. The patient's health seemed much below par. The Wassermann reaction was negative.

NEVUS LIPOMATODES. Presented by DR. SHERWELL.

Mrs. V. V., aged 22, a decided blond, presented a nevus lipomatodes on the forehead. A slight discoloration was present on the patient from birth. The parts affected were the right side of the nose, extending over the forehead to the border of the hairy scalp on that side.

DISCUSSION

DR. SHERWELL said that he had had a number of cases in which it was claimed that the condition was due to prenatal impressions, and he could not but feel that such claims were entitled to some credit. He knew, of course, the anatomic and physiologic objections, and of course it went without saying

that profound impressions made on the mother were not always followed by ill results; but that an intensely vivid impression might in some instance produce some such effect was not beyond credence and was supported to a certain extent by the widespread belief extending through the ages. In the lower animals he had observed many striking instances of this possible fact but could not in the press of time present them.

CASE FOR DIAGNOSIS. Presented by DR. TRIMBLE.

G. M., a woman, aged 45, born in the United States, had suffered for two years with superficial erosion of the gums. Viewed clinically, the disease seemed to be an exfoliation of the epithelium; this exfoliation occurred at frequent intervals and during an attack the various size areas would be raw in appearance. The patient claimed that the lesions started as blebs which would later rupture and peel off, although no distinct vesicles or blebs had been noticed by the presenter. The eruption produced both pain and burning, and interfered with eating. She had consulted numbers of dentists and physicians without relief.

DISCUSSION

DR. WISE inquired whether Dr. Trimble had ever read what Sutton stated about peri-adenitis mucosa necrotica recurrens, in his textbook.

DR. TRIMBLE replied that he had discussed the subject (peri-adenitis) with Sutton personally, several years ago. The patient was free from the lesions at times for a week or ten days, and then they would recur. The woman's husband stated that she had had one or two attacks, diagnosed by the family physician as gallstone colic. Dr. Whitehouse then inquired whether any of the members thought the condition might represent a beginning pemphigus.

DR. HOWARD FOX said that his case, to which Dr. Wise had referred, was not like the one presented. It was similar to the condition described in the textbook of Dr. Sutton as a recurrent peri-adenitis of the mucous membrane.

DR. WILLIAMS thought it was a chronic infectious process and that the diagnosis could probably be determined by a careful microscopic and cultural examination of pus obtained from the gums.

DR. POTTER agreed with Dr. Williams, and told of two similar cases at the Long Island College, one of which had been studied for a year, all examinations to determine the etiology being negative. It was finally decided that it was due to some infectious process, the cause of which could not be determined. It improved under treatment for such a condition, but never entirely cleared up.

DR. TRIMBLE said that in this case a culture had shown some form of staphylococcus; vaccines had been made and used on the patient without any effect. He did not think it could be peri-adenitis mucosa, for he had understood that the condition which Sutton described was nodular, sloughing and deeper seated. The condition in the patient just shown was a superficial exfoliation of the mucous membrane, especially on the gums.

CASE FOR DIAGNOSIS (LESION OF THE GLANS PENIS). Presented by DR. HOWARD FOX.

A. C., a dentist, aged 49, had suffered for the past seven or eight years from recurring attacks of small vesicles on the under surface of the glans penis. They had lasted for a few days, as a rule, and had given rise to no sub-

jective symptoms. The lesions never ruptured nor formed crusts. The condition as presented was first noticed five months ago and had remained practically unchanged since then. It consisted of an elevated circumscribed patch on the left side of the under surface of the glans, composed apparently of closely crowded shiny vesicular lesions. On puncture with a needle, a tiny drop of clear fluid escaped. A portion of the patch had lately been cauterized by a physician with silver nitrate. There was no palpable enlargement of the inguinal glands.

DISCUSSION

Dr. Whitehouse said he could throw little light on the case, but he could not feel that such an eruption continuing for that length of time, even though the vesicles were there, was a simple thing like herpes. It might be a rare type of Paget's disease. It was certainly worth considering along that line.

Dr. Highman said it was very difficult to formulate a clinical opinion, but he thought it was epithelioma. On account of the obvious importance of making a correct diagnosis, the matter should be decided by a microscopic examination. A biopsy should be performed and the diagnosis made while the patient was on the table. If unfavorable, either the actual cautery or treatment as recommended by Pfahler of Philadelphia should be used, followed by roentgen ray or radium therapy, subject, of course, to the opinion of the surgeon. If any procedure was carried out locally, it ought to be followed by roentgen-ray therapy on both groins. The whole treatment, however, rested on accurate microscopic study of the case.

Dr. Trimble said that the lesion impressed him as an epithelioma of the superficial basal cell type, pretty much the same thing as Paget's disease. It was hard, however, to reconcile that diagnosis with the vesicles on the border of the lesion. He had seen a case very much like this, but with no vesicles on the border. He would certainly remove a small piece for microscopic examination.

Dr. G. H. Fox said that the lesion had persisted for some five months, and that if it continued for five months longer it would probably look more like epithelioma than it did now.

Dr. Klotz said he did not feel sure that the lesion was an epithelioma. Perhaps the removal of the prepuce would do away with the irritation by the constant friction and establish more favorable conditions for healing.

Dr. Kingsbury expressed the opinion that at the present time the case called for conservative therapy. From the history the man had evidently been badly treated; he had had stimulation and various applications and it might be better if he had not been treated at all. It was the type of case that might very easily develop into epithelioma.

Dr. Wise said that the occurrence of vesicles made him think of lymphangiectodes. The diagnosis of epithelioma was a risky one to make, whereas there were undoubted fluid lesions suggesting lymphangiectodes. These occurred frequently on the scrotum but were rare on the penis. That was the only diagnosis he could think of, taking into consideration the vesicle formation.

Dr. Highman said that from the diversity of opinion that had been expressed he could not see any harm in a conservative procedure such as he had suggested.

Dr. Howard Fox asked what Dr. Wise would suggest as a diagnostic procedure.

Dr. Wise replied that he would not make a biopsy on the glans penis, but would treat the case as Dr. Highman had suggested. The best interest of the patient called for the destruction of the growth rather than determining what it was, unless one was sure it was an epithelioma.

Dr. Trimble cited a case in which biopsy was made and the case proved to be epithelioma. He then did a curettage and cauterization, and five years later showed the patient before the Society, perfectly well.

EPIDERMOPHYTOSIS (THREE CASES). Presented by Dr. Williams.

The first patient, Mrs. B. C., aged 35, complained of an intertrigo of the toes of both feet, with much swelling, burning and itching, which had been present since November, 1920. The pain and swelling was so great as to make walking difficult. She showed the maceration between the toes, with scaling at the posterior border of the inflamed area, typical of tinea infection. Mycelia were demonstrated in the scales, but the type of organism was not yet determined.

The second patient, Mrs. A. Y., aged 23, came to the hospital May 16. She had a localized eruption of deep vesicles on the sole of the right foot just behind the ball of the great toe, occupying an oval area about 1½ by 2 inches. The eruption was not intense in the center of this area, and the border was indefinite. She had a similar smaller group of deep vesicles on the radial surface of the left little finger. Mycotic organisms were demonstrated from both the hand and the foot. She was given Whitfield's ointment, half strength, and four days later returned with an acute vesicular outbreak on both hands and feet, involving palms and soles, the lateral surface of the fingers, and the dorsum of the right foot. Mycelia were demonstrated from a vesicle on the part of the foot first affected, but could not be found in the fresh vesicle on the dorsum of the foot. On both legs, both forearms, and on the upper part of the chest in front was a sparse erythematous eruption, consisting of pale pink oval, slightly elevated spots, about a quarter to a half inch in diameter, some of which presented a small vesicle which was sometimes in the center, sometimes at the periphery. The use of Whitfield's ointment was discontinued, and she was told to wash thoroughly with soap and warm water and to use calamin lotion. This she did, and within three days the eruption on the hands and feet was receding. The erythematous eruption on the forearms and legs persisted, and as presented bore a striking resemblance to pityriasis rosea, with pale center, and pink, slightly scaly, border, but without vesicles. Except for a few spots in the sternal region the trunk was free. Scrapings from the site of the original lesion on the foot, from a vesicle on the wrist, and from one of the lesions resembling pityriasis rosea were all negative.

The third patient, H. B., a boy, aged 9 years, came under treatment May 18, with a history of having had tinea for about eight weeks and kerion for three weeks, most acute during the early part of May. There had been much swelling of the scalp, especially of the right side, accompanied with exudation of sero pus. For the last three weeks the child had been restless and feverish at night, and had a poor appetite. The kerion was about 2 inches in diameter, with a few outlying spots. Spores were demonstrated in the hair. There was no eruption on the body. On May 18, the kerion was subsiding. Surrounding the neck, most marked on the sides, was an eruption of small, soft follicular papules. Those at the border of the area were flesh colored, the others becoming a deeper red and more elevated toward the center of the area involved.

There were some urticarial lesions on the forearm. On May 20, urticarial lesions were still visible on the forearm, but the papules on the neck were fading.

The first case was one of typical ringworm of the feet; the second, a case of ringworm of the sole of the foot and of the fingers, followed by an eruption which seemed to be a trichophytid. This was the second case Dr. Williams had seen of acute infection of ringworm of the hands, producing at the height of the process an eruption which seemed to be a trichophytid, and which subsided without antiparasitic treatment. The third case was kerion followed by papular trichophytid.

DISCUSSION

Dr. Highman said it was a most interesting group of cases, representing what in the old days would have received internal treatment. He said that usually such cases made a circuit of all the dermatologists in the vicinity. The literature on the subject dated back some seven or eight years. Whitfield was the first English speaking author to write about it, while Ormsby and Mitchell deserved the credit of having popularized the subject in this country. On account of the war we almost lost sight of the fact that a number of men in Europe had investigated the matter. Since then every one seemed to think that the underlying condition was a fungus. Almost any pus producing fungus would cause such a picture. The case of the boy was the most interesting of the three. He suggested that Dr. Williams try cataphoresis.

Dr. Howard Fox said that Dr. Williams' demonstration was very instructive and tended to call attention to the fact that many cases of so-called eczema were in reality due to some form of tinea. He regretted that he could not have shown a patient he had recently seen who presented nondescript dry, scaly patches on the extremities, together with a circinate, sharply bordered eruption on the inner aspect of the thighs and a typical onychomycosis (affecting one finger). The fungus was readily found in scrapings from the skin of the arm. The generalized eruption presented by a boy with kerion was a type that had not previously been presented before the Society. It was undoubtedly one of the so-called "trichophytids," representing a toxic or allergic reaction. He had recently seen two cases of more or less generalized eruption appearing in children with ordinary ringworm of the scalp, about two and a half weeks after roentgen-ray treatment. In these cases, there had not been the usual constitutional manifestations noted in cases with kerionic ringworm. He called attention to the differences in type in these allergic cases as reported by Rasch and others. They were at times lichenoid or scarlatiniform, or like a seborrheic eczema in appearance.

Dr. Trimble said that he has been interested in this subject for some time, but would undoubtedly call the condition shown by the young woman in the center a pompholyx. He did not question what Dr. Williams found in both lesions, but would make the diagnosis of pompholyx regardless of what was found. He did not think that every case of pompholyx was caused by the epidermophyton, and he believed that if this young woman was treated as usual for that condition she would recover. The point he wished to bring out was that just because one found a fungus in association with a skin disease it should not immediately be concluded that it was the cause of the condition.

Dr. Bechet asked if he was correct in understanding that in trichophytid one could demonstrate the fungus in the pustular lesions. In the so-called lichenoid trichophytids as described by Jadassohn, the lesions were frequently

associated with kerion. Rasch found that seventy-one of 109 cases were accompanied by kerion formation. The lesions were vesicular and pustular, and the trichophyton faviforme discoides was cultivated from the contents of these lesions.

Dr. Williams said that the woman had a typical case of ringworm of the toes. The other two cases he believed were both trichophytid. The boy had a distinct kerion and suffered from the restlessness, sleeplessness and feverishness usually found in cases giving a distinct history of trichophytid. When first seen the eruption was marked, but had faded since that time. He had seen two other cases at the Skin and Cancer Hospital within the last two months. In another case of kerion seen in the Post-Graduate Hospital, in the service of Dr. Whitehouse, there was a distinct lesion resembling lichen scrofulosorum on the neck. The boy also showed two lesions on the neck resembling tinea circinata, but no organisms were found. As Dr. Fox had pointed out, a number of these cases had been described by various authors. The lesions that had been described were papular, like erythema multiforme, and like scarlatina, pustular and vesicular.

A patient seen last March at the Skin and Cancer Hospital had a temperature of 103, with a profuse eruption over the chest and arms, and papules forming lesions an inch or more in diameter. These cases regularly recover without treatment. The girl certainly went on to recovery without any treatment. The worse the kerion, the more quickly they got well and the more quickly the rash subsided.

Dr. Williams said further that he had always treated these cases with antiseptic ointment, but he thought that they would do just as well with the use of boric acid fomentations, which was considered the best treatment.

The young woman was the most interesting case. She undoubtedly had pompholyx, but that was simply a name for an eruption and told nothing of the etiology. The patients would usually get well in time, regardless of treatment. Whether or not Dr. Highman was right in saying that there were a number of different forms of pompholyx, some caused by toxins, he could not say. There was an increasing tendency to believe that most of them were caused by ringworm. Schrameck mentioned it particularly in the sole. That was the most definite lesion of tinea of the foot. The lesions on the sides of the fingers were the most difficult in which to find the organisms. On the sole they were fairly easy to find. It did not seem to be a case of epidermophytosis. The toes were not involved; and it seemed to be an infection with some form of trichophyton.

The great interest in the case was not in the finding of mycelia, but in the fact that there was a sudden outbreak over both soles and over the palms and legs. It seemed to be a case of trichophytid caused not by the spread of the organism but by the spread of the toxins, and was to be accounted for by the distribution of the toxins through the system. The patient had had a localized eruption for weeks, and then at the end there was a sudden outbreak of distinct vesicles, followed by quick recovery. She produced her own antitoxins and recovered. She showed no improvement under Whitfield's ointment, but did show improvement under the use of soap and water. It was difficult to say, however, whether or not that had anything to do with the cure. She seemed to have reached the climax of the disease, and acquired immunity.

He then cited an almost identical case with lesions on the hand, appearing on the little finger and spreading over the hand. After a month, following the use of vaselin, a severe outbreak occurred over both hands and up the arm as far as the elbow. The patient did not improve under Whitfield's ointment, but under the use of soap and water got well quickly. There were cases reported of trichophytid following cases of tinea of the scalp or beard, but he did not know of any following tinea of the extremities. He was not aware of any cases of trichophytid that had been reported before the Society or anywhere in America.

URTICARIA PIGMENTOSA. Presented by DR. HOWARD FOX.

This patient had previously been reported at the last meeting of the Dermatological Section of the Academy of Medicine, on May 2. Since then the histologic examination by Dr. Highman had been completed. He reported a failure to find mast cells in the section. The Wassermann reaction had also been performed since the last meeting and was negative.

DISCUSSION

DR. HIGHMAN said that clinically the case was urticaria pigmentosa, but he had not been able to find mast cells. Hartzell had taken up the question before the American Dermatological Association and claimed that one could not make a diagnosis histologically without finding the mast cells in some of the lesions presented by the patient. Dr. Highman said that he himself had no doubt that the condition occurred in adults. Clinically, the case was urticaria pigmentosa, and he did not see why it could not be acquired.

SCLERODERMA. Presented by DR. WHITEHOUSE.

The patient was a woman showing a generalized scleroderma with sclerodactylia, and an unusual feature not before noted—atrophy of the tongue. The woman was about 46 years old, a native of Poland. She stated that the trouble began three months after her marriage, twenty-three years ago. She had had five children.

Dr. Whitehouse said that the condition seemed to be opposed to acromegaly, and asked the opinion of the members as to whether treatment with pituitary extract might produce any benefit.

The diagnosis was accepted without dissent.

HYDROA VACCINIFORME. Presented by DR. WHITEHOUSE.

The patient was a boy 8 years of age, and the condition had developed four years previously, when he had had scarlet fever. When first seen in November, he had no vesicles and showed only a few smallpox-like scars, but on appearing again recently he showed classical vesicular lesions of hydroa vacciniforme. He had had three attacks of the eruption since November. The storms of winter and the heat of summer alike seemed to provoke the attacks. The eruption was confined to the exposed portions of the body—the hands, face and ears.

This patient recalled another patient whose case he had presented three years ago—a little girl who was playing on the edge of a brook in the winter time, and the strong light of the reflected sun provoked the outbreak.

The diagnosis was accepted without dissent.

CASE FOR DIAGNOSIS. Presented by Dr. Whitehouse.

M. M., a man, aged *32*, stated that the eruption exhibited had been present for six weeks. It began on the anterior surface of the right forearm, and soon thereafter appeared on the right side of the neck, front of the thighs, and back of the knees. The scalp and face were entirely free. The lesions were erythematous and presented little or no scaling. On the right arm they formed an aggregated patch involving most of its anterior aspect. At the lower part of this patch were distinct follicular lesions. On the right side of the neck they were plainly lichenified. There was also some lichenification on the thighs, and the lesions in that location were somewhat papular in appearance. The eruption was dry, and the patient stated that it was very pruritic. This was belied, however, by the absence of scratch marks.

DISCUSSION

Dr. Bechet said that he had observed the case that afternoon by daylight, and in his opinion it resembled a seborrheic eczema.

Dr. G. H. Fox said he would make the diagnosis of a follicular type of papular eczema. One of the best photographs he had ever taken was of a man whose thigh and leg were covered with follicular papules without any coalescing of the lesions. There was scarcely a follicle that was not inflamed.

LUPUS ERYTHEMATOSUS. Presented by Dr. Williams.

Mrs. R. M., aged *26*, born in the United States, gave an irrelevant past history. The eruption presented began four years ago as a small red pimple. The lesion left a small red patch which had spread since. It had been of the size exhibited for almost two years. There was slight scaling until a year ago. It had been treated by ointments for eczema. Since February she had under a doctor's direction, applied camomile tea, which gave rise to the present heaped up appearance of thick black adherent scales. She stated that the lesions itched at times. She presented a single lesion on the right cheek about the size of a twenty-five cent piece. The border was ill-defined, with a thin adherent grayish-green crust. Over the bridge of the nose and on the contiguous borders of the cheeks on both sides was a sharply defined lesion covered with a thick, hard, heaped-up black adherent crust. On removal of a fragment of this at the border, "pegs" were demonstrated.

LUPUS ERYTHEMATOSUS. Presented by Dr. Winfield.

A. F., male, aged *29*, born in Russia. One year ago a papule about the size of a ten cent piece appeared on the chin. This rapidly became covered with a thick black crust. Soon similar lesions appeared on the lip, bridge of the nose, side of the cheek, and back of the ear. The one on the cheek had involuted, leaving a white scar; the lesion on the lip was the size of a large split pea, was ulcerated, and had a slightly indurated border. The other lesions were covered with a thick black crust.

When first seen, the diagnosis of syphilis was entertained; but as the Wassermann and therapeutic tests were negative the diagnosis of lupus erythematosus was made. The case was shown because of the intensely black color and thickness of the crust.

DISCUSSION

Drs. Bechet and Schwartz both thought the lesion in Dr. Williams' case lupus erythematosus, and this diagnosis was generally accepted.

ONYCHOMYCOSIS. Presented by Dr. Howard Fox.

I. S., aged 23, born in the United States, a traveling salesman, first noticed the disease of the nails about two years ago, while he was still in military service. The nails of the left hand became affected one after another during a period of six months. Previous to the nail disease he had suffered from a scaly eruption of the left hand for ten months. Examination showed marked dystrophic changes of all the nails of the left hand, the other finger nails and toe nails being normal. There was no evidence of paronychia. Microscopic examination of scrapings from one of the affected nails was positive.

SYPHILIS (?). Presented by Dr. Wise for Dr. Fordyce.

Mrs. M. M., an Irish housewife, aged 58, had possibly been infected with syphilis at marriage, sixteen years previously, but had never been treated for it. For the past year, there had been unusually exuberant nodular serpiginous lesions on the posterior surface of the left leg, including the popliteal space. At the time of presentation there was some ulceration, as well as central pigmentation and atrophy. The lower third of the leg showed a varicose dermatitis. (Subsequently there was a strongly positive Wassermann reaction, and a biopsy examination showed the lesions to be undoubtedly gummatous.)

DISCUSSION

Dr. Whitehouse said that from the multiplicity of the lesions, their distribution, and the character of the scars, he would consider the case syphilitic.

Dr. Potter agreed with Dr. Whitehouse.

Dr. Highman said that clinically the case appeared to be syphilis. The lesions showed a lot of unusual granulation tissue, an atypical background with more or less of the characteristics of syphilis. If yaws could be ruled out, it was quite significant of syphilis. There was nothing to suggest sarcoid.

LEPROSY. Presented by Dr. Potter.

I. F., was a young man from Egypt who had lived in the United States for eight years. He stated that he had always been well excepting for an attack of malaria when a boy. About three years ago he first noticed a partial anesthesia of the little finger of the right hand, the condition finally involving all the fingers of that hand. At about that time nodules appeared on his entire body including the face and extremities. Many of these nodules broke down leaving open sores. There were no other subjective symptoms except occasional attacks of pain in the feet if not bandaged As presented there were a number of raised purplish nodules on the face, hard and not painful to the touch. There was also a nodule on the cornea of the left eye and there were a few scars of former lesions. On the lower half of the legs and also on the lower part of both forearms were ulcerations in various stages.

The patient had received injections of chaulmoogra oil weekly for one year, and in addition one injection of arsphenamin, 0.3 gm., and three injections of silver arsphenamin, from 0.1 to 0.15 gm. Since treatment, the eye condition had improved.

Dr. G. H. Fox reported further on the case of acanthosis nigricans presented at a previous meeting. He had seen the patient again and the inflammatory conditions having disappeared the case again presented only the symptoms described in the books as acanthosis nigricans. He hoped he would again have opportunity under more favorable circumstances of presenting this patient before the Society.

Fred Wise, Secretary.

PITTSBURGH DERMATOLOGICAL SOCIETY

Regular Meeting, June 30, 1921

J. G. BURKE, M.D., *Presiding*

SARCOMA. Presented by DR. BOGGS.

A man, aged 48, who had had a small epithelioma removed from the lower lip nine years ago, was struck seven months ago on the chin, and a large tumor developed rapidly. A diagnosis of sarcoma was made, and it was concluded that the sarcoma was independent from the epithelioma. The growth was approximately the size of a small orange, was quite hard and fixed on the underlying bone.

DISCUSSION

DR. HOLLANDER agreed with the diagnosis.

DR. BOGGS stated that the patient was receiving radium treatment.

DYSHIDROSIS INFECTED WITH STAPHYLOCOCCI. Presented by DR. CRAWFORD.

A man, aged 32, a miner, noticed an eruption commencing on the palms and soles after working three months mining coal; most of this time his hands and feet were wet in sulphur water. The palmar surfaces became inflamed and covered with minute vesicopustules. The middle inner surfaces of the soles became likewise involved. The duration was six weeks. The periphery of the inflamed area of the soles suggested a trichophytosis, but microscopic examinations failed to reveal any fungus.

DISCUSSION

DR. GUY said that he favored a diagnosis of epidermophytosis and suggested that further search for the fungus be made.

DR. JACOB suggested multiple cultures from the edges of the lesions.

DR. SCHWARTZ thought that the condition should be classed as an occupational dermatitis due to constant maceration in sulphur water.

DR. CRAWFORD said that he had considered trichophytosis but had been unable to find the fungus. He felt that the clinical appearance and course of the condition justified a diagnosis of dyshidrosis.

MULTIPLE LIPOMAS. Presented by DR. BURKE.

A man, aged 37, for twenty years had noticed lumps appearing on his arms and legs and a few on his body. At the time of presentation the lumps numbered seventy and were mostly pea to hazelnut sized, except two which were as large as a walnut. The growths were subcutaneous, freely movable and seemed to follow the lymphatic glands. Several of the growths had been excised and a section of one was diagnosed as lipoma.

DISCUSSION

DR. CRAWFORD said that the location of the tumors along the course of the veins and in the loose areolar tissue favored the diagnosis as given. He felt that these growths should be classified as nevi.

DR. BURKE stated that the patient was very anxious to have something done and that he intended to insert radium needles in several of the growths to learn whether the radium would dissolve or liquify the fat.

SCLERODERMA. Presented by DRS. GUY, HOLLANDER and JACOB.

A woman, aged 34, nine months before had noticed swelling of the left leg, mostly below the knee and ten days later blackish spots near the knee, which became covered with scales and finally appeared as white atrophic scars. Similar lesions then appeared on the foot. Following this there developed a confluent linear lesion extending from the level of the great trochanter to the tip of the first and second toes. At the time of presentation there were two dime sized ulcers near the ankle. Near the thigh were numerous erythematous infiltrated plaques interspersed with depressed atrophic areas of the same size. The entire area was hard and sclerotic. The patient complained of much pain, especially at night. She had been on thyroid medication for some time prior to presentation and presented definite signs of hyperthyroidism. She also presented signs of arteriosclerosis and chronic nephritis.

DISCUSSION

DR. SNITZER called attention to the exophthalmos and suggested the possibility of endocrinous disturbance in a causal rôle.

DR. CRAWFORD agreed with the diagnosis and suggested the possibility of nerve injury on account of the distribution of the lesion and because the patient connected the appearance of the eruption with an injury to the hip. He felt that the ulcerations were trophic. He asked whether the urine had been searched for arsenic.

DR. HOLLANDER stated that the distribution of the lesion was compared with the dermadones of Djerden and no typical nerve distribution could be shown. He called attention to the fact that the knee jerk on the opposite side was increased, the consulting neurologist suggesting the possibility of a tumor of the cord located under the fourth or fifth lumbar vertebrae. He thought that the distribution of the eruption might be accounted for as following the line of venous return flow. He felt that the oversecretion of the thyroid was incidental to thyroid medication which was definitely contraindicated in this case.

LICHEN PLANUS HYPERTROPHICUS WITH BULLOUS LESIONS. Presented by DRS. GUY, HOLLANDER and JACOB.

A man, aged 49, had a generalized eruption of six weeks' standing which differed in different parts of the body. On the forearm the lesions appeared symmetrically distributed, slightly more pronounced on the flexor surfaces. Individual lesions were typical of lichen, but the bulk of the eruption was confluent with slight scaling and somewhat verrucous in character. On both sides of the buccal mucous membrane a conglomerate patch of whitish quadrangular papules could be seen and felt. The lesions on the legs were more pronounced and shiny with the formation of circumscribed elevated verrucous patches. The right leg showed edema, and two bullous lesions were noted—one on a patch of lichen, the other bordering a similar patch.

PAPULONECROTIC TUBERCULID. Presented by DRS. GUY, HOLLANDER and JACOB.

A woman, aged 19 years, first noticed a papular eruption on her arms and legs fourteen months before presentation. The eruption would improve at times,

but new crops appeared at intervals. Since being under observation two crops had appeared. The early lesion was a firm papule which was soon capped by a small pustule. The center of the older lesions was depressed and black. The lesions left scars. Numerous large ecthymaform lesions were present on different parts of the body. She gave a history of gradual loss of weight, severe headaches, dizziness and nausea. The condition began about the middle of pregnancy and had gradually become aggravated. She gave marked symptoms of hyperthyroidism, including a positive von Graefe, Möbius and Rosenbach sign, and oculomotor test, and her basal metabolism showed a 31 per cent. increase. Local applications of various kinds were made with considerable improvement, but new crops would appear. About one month prior to presentation local treatment was discontinued and treatment by roentgen rays directed to the thyroid gland instituted. Since that time no new lesions had appeared, and the eruption and symptoms of hyperthyroidism were rapidly disappearing.

DISCUSSION

DR. CRAWFORD offered a diagnosis of ecthyma on account of the rapid onset, the pustular type of the lesions and a leukocytosis reported by the presenters.

DR. GUY was of the opinion that the similarity to ecthyma might well be attributed to secondary infection of typical lesions of papulonecrotic tuberculid.

DR. JACOB stated that regardless of the exact nature of the primary eruption, the leukocytosis could be accounted for by the considerable quantity of pus under the skin.

DR. HOLLANDER felt that there was a direct relationship between the hyperthyroidism and the eruption as evidenced by the disappearance of the eruption, together with improvement of the thyroid manifestations.

PSORIASIS CLEARED BY INTRAVENOUS USE OF FOREIGN PROTEIN. Presented by DRS. GUY, HOLLANDER and JACOB.

A man, aged 27, had appeared at the university dispensary with a typical generalized eruption of guttate psoriasis. Foreign protein in the form of paratyphoid vaccine was administered intravenously, beginning with one minum and ending with 36 minums. No local applications were made, and the eruption disappeared in fourteen days leaving only brownish spots in the sites of the lesions.

DISCUSSION

DR. CRAWFORD felt that a diagnosis of lichen planus should be considered on account of the pigmentation left by the lesions, the rapidity of evolution of the eruption and the presence of one suggestive papule on the forearm of the patient.

DR. GUY stated that the case was one of typical guttate psoriasis with a generalized eruption having a predilection for the bony prominences. The individual lesions were covered by abundant imbricated scales on removal of which fine bleeding points could be demonstrated. Subjective symptoms were entirely lacking. He stated that the case was presented only to demonstrate the effect of protein therapy in clearing the lesions; that he did not favor its employment except under unusual conditions, rather favoring the application of fractional doses of roentgen rays.

DR. BOGGS favored roentgen rays for clearing generalized psoriasis.

DR. JACOBS said that the method had been tried in the service of Drs. Engman and Mook and such pigmentations as those noted here were the rule; and that the method was only an alternate method of removing lesions, which would recur quite as promptly as after any other form of treatment.

DR. HOLLANDER said that any diagnosis other than psoriasis was untenable.

GLOSSITIS. Presented by DR. SNITZER.

A man, aged 46, born in Russia, a teacher, presented small shallow ulcerations on the edges of the tongue, which were of three years' duration. There were also several healed areas on the dorsal surface which were smooth and atrophic. There was no history of infection, no glandular enlargement and no edema of the tongue. In the preceding two years the lesions had cleared up at the end of the winter, and the patient had had no subjective symptoms. This year the lesions persisted, and he had a burning sensation at night.

DISCUSSION

DR. SCHWARTZ favored a diagnosis of syphilis. He felt that a Wassermann test and a vigorous therapeutic test would settle the question.

DR. SNITZER said that the patient had been put on specific treatment, although he doubted that the case was syphilitic. The lesions were also painted with silver nitrate which seemed to bring about marked improvement. Because of the specific treatment no Wassermann test had as yet been made.

CORRECTION

On page 256 of the August issue, the last word in the twelfth line from the bottom should be "reappear" instead of "disappear."

Book Review

LA DERMATOLOGIA NEI SUOI RAPPORTI CON LA MEDICINA INTERNA (DERMATOLOGY IN ITS RELATIONS TO INTERNAL MEDICINE). P. L. Bosellini, Professor of Dermatology of the University of Messina. One volume, 600 pages. Milano: Societá Editrice Libraria, 1921.

Professor Bosellini has written a unique book. We do not know of any other treatise in the dermatologic literature covering so thoroughly and so scientifically the subject of the relation of internal disorders to dermatology. The first two chapters are dedicated to the anatomy and physiology of the skin, and these subjects are treated in detail. A special point is made of the description of the nervous system, particularly of the sympathetic. The third and fourth chapters deal with the pathologic anatomy and etiology of skin diseases, respectively. The second part of the book is the most important. It is dedicated to the study of the pathologic relations between the different organs and apparatus of the body and the skin. Professor Bosellini discusses the metabolism of fats in its relations to such diseases as xanthoma and seborrhea, the metabolism of carbohydrates and that of proteins and inorganic materials. Xanthoma is due to an excess of cholesterol in the body and the accumulation of this fatty substance in the tissues. Seborrhea is due to a disturbed metabolic activity of the epidermis and its appendages primarily and mainly caused by incomplete digestion of certain fats (butter) and of carbohydrates (potatoes and sugars). Especially interesting are the chapters on metabolism of carbohydrates in relation to diabetes and diabetic dermatoses and that of the proteins in relation to psoriasis, urticaria and eczema.

Bosellini calls "sympaticopathias" a series of dermatoses the etiology of which he finds in disturbances of the sympathetic nervous system, especially in its relation to the endocrine glands and to the trophic nutrition of the skin. These sympaticopathias are: cutaneous atrophy, scleroderma, Dercum's disease, gangrene, Raynaud's disease, keloid, edema angioneuroticum, zoster, alopecia areata, ichthyosis, dystrophies of the hair and other conditions.

There is a close relationship between the sympathetic system and the ductless glands and some authors believe that they form only one system which they call neuro-endocrine. The chapter on the relation of the internal secretions to dermatoses is limited, and it seems that the author should have given more extension and more importance to this subject. The chapters on digestive and respiratory systems in their relation to cutaneous disorders are interesting. Blood disturbances, especially the leukemias and their cutaneous symptoms, are well presented.

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